

Model Advisor Report – SelfBalancingEV_V2.slx

Simulink version: 10.5

Model version: 1.2

System: SelfBalancingEV_V2

Current run: 26-Mar-2022 22:51:25

Treat as Referenced Model: off

Run Summary

Incomplete	Failed	Warning	Justified	Passed	Not Run	Total
11	323	291	0	426	577	1628

Model Advisor

By Product

0 0 0 0 0 577

Embedded Coder

0 0 0 0 0 28

Identify lookup table blocks that generate expensive out-of-range checking code

Not Run

Check configuration parameters for generation of inefficient saturation code

Not Run

Check for blocks not recommended for C/C++ production code deployment

Not Run

Check output types of logic blocks

Not Run

Check the hardware implementation

Not Run

█ *Identify questionable software environment specifications*

Not Run

█ *Identify questionable code instrumentation (data I/O)*

Not Run

█ *Identify blocks generating inefficient algorithms*

Not Run

█ *Check configuration parameters for MISRA C:2012*

Not Run

█ *Check for blocks not recommended for MISRA C:2012*

Not Run

█ *Check for unsupported block names*

Not Run

█ *Check usage of Assignment blocks*

Not Run

█ *Check for switch case expressions without a default case*

Not Run

█ *Check for missing error ports in AUTOSAR receiver interfaces*

Not Run

█ *Check configuration parameters for secure coding standards*

Not Run

 *Check for blocks not recommended for secure coding standards*

Not Run

 *Identify questionable subsystem settings*

Not Run

 *Check for blocks not supported for row-major code generation*

Not Run

 *Identify TLC S-Functions with unset array layout*

Not Run

 *Identify blocks that generate expensive fixed-point and saturation code*

Not Run

 *Check for missing const qualifiers in model functions*

Not Run

 *Check bus object names that are used as bus element names*

Not Run

 *Identify questionable fixed-point operations*

Not Run

 *Identify blocks that generate expensive rounding code*

Not Run

 *Check for bitwise operations on signed integers*

Not Run

 *Check for recursive function calls*

Not Run

 [Check for equality and inequality operations on floating-point values](#)

Not Run

 [Check integer word lengths](#)

Not Run

 Simulink  0  0  0  0  0  42

 [Check optimization settings](#)

Not Run

 [Identify unconnected lines, input ports, and output ports](#)

Not Run

 [Check root model Inport block specifications](#)

Not Run

 [Check diagnostic settings ignored during accelerated model reference simulation](#)

Not Run

 [Check for parameter tunability information ignored for referenced models](#)

Not Run

 [Check for implicit signal resolution](#)

Not Run

 [Check for optimal bus virtuality](#)

Not Run

 [Check for calls to `slDataTypeAndScale\(\)`](#)

Not Run

█ *Check for Discrete-Time Integrator blocks with initial condition uncertainty*

Not Run

█ *Identify disabled library links*

Not Run

█ *Identify parameterized library links*

Not Run

█ *Identify unresolved library links*

Not Run

█ *Identify configurable subsystem blocks in the model for converting to variant subsystem blocks.*

Not Run

█ *Check usage of function-call connections*

Not Run

█ *Check and update mask image display commands with unnecessary imread() function calls*

Not Run

█ *Check and update mask to affirm icon drawing commands dependency on mask workspace*

Not Run

█ *Identify Environment Controller blocks to be replaced with Variant Source blocks*

Not Run

█ *Runtime diagnostics for S-functions*

Not Run

 *Check if Read/Write diagnostics are enabled for Data Store blocks*

Not Run

 *Check Data Store Memory blocks for multitasking, strong typing, and shadowing issues*

Not Run

 *Check Model History properties*

Not Run

 *Check S-functions in the model*

Not Run

 *Open the Upgrade Advisor*

Not Run

 *Check structure parameter usage with bus signals*

Not Run

 *Check for large number of function arguments from virtual bus across model reference boundary*

Not Run

 *Check Delay, Unit Delay and Zero-Order Hold blocks for rate transition*

Not Run

 *Check bus signals treated as vectors*

Not Run

 *Check for potentially delayed function-call block return values*

Not Run

 *Identify block output signals with continuous sample time and non-floating point data type*

Not Run



Check usage of Merge blocks

Not Run



Check usage of Outport blocks

Not Run



Check usage of Discrete-Time Integrator blocks

Not Run



Check model settings for migration to simplified initialization mode

Not Run



Check for non-continuous signals driving derivative ports

Not Run



Check data store block sample times for modeling errors

Not Run



Check for potential ordering issues involving data store access

Not Run



Identify unit mismatches in the model

Not Run



Identify automatic unit conversions in the model

Not Run



Identify disallowed unit systems in the model

Not Run

 [Identify undefined units in the model](#)

Not Run

 [Identify ambiguous units in the model](#)

Not Run

 [Identify questionable operations for strict single-precision design](#)

Not Run

 Simulink Coder  0  0  0  0  0  9

 [Identify blocks using one-based indexing](#)

Not Run

 [Check solver for code generation](#)

Not Run

 [Check for blocks not supported by code generation](#)

Not Run

 [Check for model reference configuration mismatch](#)

Not Run

 [Check code generation identifier formats used for model reference](#)

Not Run

 [Check for relative execution order change for Data Store Read and Data Store Write blocks](#)

Not Run

 [Check reuse of subsystem code](#)

Not Run

 [Check sample times and tasking mode](#)

Not Run

 [Check for blocks that have constraints on tunable parameters](#)

Not Run

 HDL Coder  0  0  0  0  0  36

 [Checks for blocks and block settings](#)  0  0  0  0  0  10

 [Check for unsupported blocks](#)

Not Run

 [Check for HDL Reciprocal block usage](#)

Not Run

 [Check for MATLAB Function block settings](#)

Not Run

 [Check for obsolete Unit Delay Enabled/Resettable blocks](#)

Not Run

 [Check for infinite and continuous sample time sources](#)

Not Run

 [Check for unsupported storage class for signal objects](#)

Not Run

 [Check for Stateflow chart settings](#)

Not Run

 Check for Trigonometric Function block for LUT-based approximation method
Not Run

 Check for large matrix operations
Not Run

 Check for blocks that have nonzero output latency
Not Run

 Industry standard checks        11

 Check architecture name
Not Run

 Check clock settings
Not Run

 Check clock, reset, and enable signals
Not Run

 Check file extension
Not Run

 Check generics
Not Run

 Check naming conventions
Not Run

 Check package file names
Not Run

Check signal and port names

Not Run

Check entity and architecture

Not Run

Check module/entity names

Not Run

Check top-level subsystem/port names

Not Run

Model configuration checks 0 0 0 0 0 6

Check delay balancing setting

Not Run

Check for global reset setting for Xilinx and Altera devices

Not Run

Check inline configurations setting

Not Run

Check for model parameters suited for the HDL code generation

Not Run

Check for visualization settings

Not Run

Check algebraic loops

Not Run

Checks for ports and subsystems 0 0 0 0 0 2

Check initial conditions of enabled and triggered subsystems
Not Run

Check for invalid top level subsystem
Not Run

Native Floating Point checks 0 0 0 0 0 7

Check for double datatypes in the model with Native Floating Point
Not Run

Check for Data Type Conversion blocks with incompatible settings
Not Run

Check for HDL Reciprocal block usage
Not Run

Check for Relational Operator block usage
Not Run

Check for single datatypes in the model
Not Run

Check for unsupported blocks with Native Floating Point
Not Run

Check blocks with nonzero ulp error
Not Run

Simscape 0 0 0 0 0 3

Check consistency of block parameter units

Not Run

Check for outdated AC source blocks

Not Run

Check for dry hydraulic nodes

Not Run

Simulink Check 0 0 0 0 0 459

Modeling Standards 0 0 0 0 0 449

DO-178C/DO-331 Checks 0 0 0 0 0 95

Check usage of standardized MATLAB function headers

Not Run

Check for MATLAB Function interfaces with inherited properties

Not Run

Check MATLAB Function metrics

Not Run

Check MATLAB Code Analyzer messages

Not Run

Check if/elseif/else patterns in MATLAB Function blocks

Not Run

☒ Check switch statements in MATLAB Function blocks

Not Run

☒ Check MATLAB functions not supported for code generation

Not Run

☒ Check state machine type of Stateflow charts

Not Run

☒ Check Stateflow charts for ordering of states and transitions

Not Run

☒ Check Stateflow debugging options

Not Run

☒ Check Stateflow charts for transition paths that cross parallel state boundaries

Not Run

☒ Check for inappropriate use of transition paths

Not Run

☒ Check naming of ports in Stateflow charts

Not Run

☒ Check scoping of Stateflow data objects

Not Run

☒ Check usage of While Iterator blocks

Not Run

☒ Check usage of For and While Iterator subsystems

Not Run

█ Check for blocks not recommended for C/C++ production code deployment
Not Run

█ Check for inconsistent vector indexing methods
Not Run

█ Check usage of variant blocks
Not Run

█ Check for root Imports with missing properties
Not Run

█ Check model file name
Not Run

█ Check usage of lookup table blocks
Not Run

█ Check safety-related solver settings for simulation time
Not Run

█ Check Stateflow charts for uniquely defined data objects
Not Run

█ Check global variables in graphical functions
Not Run

█ Check usage of Gain blocks
Not Run

█ Check for model elements that do not link to requirements

Not Run

█ Check safety-related settings for hardware implementation

Not Run

█ Check for parameter tunability ignored for referenced models

Not Run

█ Check for disabled and parameterized library links

Not Run

█ Check safety-related diagnostic settings for data store memory

Not Run

█ Check safety-related diagnostic settings for saving

Not Run

█ Check safety-related model referencing settings

Not Run

█ Check safety-related solver settings for solver options

Not Run

█ Check safety-related solver settings for tasking and sample-time

Not Run

█ Check safety-related diagnostic settings for solvers

Not Run

█ Check safety-related diagnostic settings for sample time

Not Run

█ Check safety-related optimization settings for logic signals

Not Run

█ Check safety-related block reduction optimization settings

Not Run

█ Check safety-related optimization settings for application lifespan

Not Run

█ Check safety-related optimization settings for data initialization

Not Run

█ Check safety-related optimization settings for data type conversions

Not Run

█ Check safety-related optimization settings for division arithmetic exceptions

Not Run

█ Check safety-related optimization settings for specified minimum and maximum values

Not Run

█ Check safety-related code generation settings for comments

Not Run

█ Check safety-related code generation interface settings

Not Run

█ Check safety-related code generation settings for code style

Not Run

☒ Check safety-related code generation identifier settings

Not Run

☒ Check safety-related diagnostic settings for compatibility

Not Run

☒ Check safety-related diagnostic settings for parameters

Not Run

☒ Check safety-related diagnostic settings for Merge blocks

Not Run

☒ Check safety-related diagnostic settings for model initialization

Not Run

☒ Check safety-related diagnostic settings for data used for debugging

Not Run

☒ Check safety-related diagnostic settings for signal connectivity

Not Run

☒ Check safety-related diagnostic settings for bus connectivity

Not Run

☒ Check safety-related diagnostic settings that apply to function-call connectivity

Not Run

☒ Check safety-related diagnostic settings for type conversions

Not Run

☒ Check safety-related diagnostic settings for model referencing

Not Run

 Check safety-related diagnostic settings for Stateflow

Not Run

 Check safety-related diagnostic settings for signal data

Not Run

 Check safety-related diagnostic settings for variants

Not Run

 Display model version information

Not Run

 Check usage of relational operators in MATLAB Function blocks

Not Run

 Check usage of logical operators and functions in MATLAB Function blocks

Not Run

 Check type and size of condition expressions

Not Run

 Metrics for generated code complexity

Not Run

 Check Stateflow charts for strong data typing

Not Run

 Check assignment operations in Stateflow charts

Not Run

 Check Stateflow charts for unary operators

Not Run

 Check usage of Abs blocks

Not Run

 Check usage of For Iterator blocks

Not Run

 Check usage of If blocks and If Action Subsystem blocks

Not Run

 Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Not Run

 Check usage of conditionally executed subsystems

Not Run

 Check relational comparisons on floating-point signals

Not Run

 Check usage of Relational Operator blocks

Not Run

 Check usage of Logical Operator blocks

Not Run

 Check usage of bitwise operations

Not Run

 Check usage of Merge blocks

Not Run

 Check data types for blocks with index signals

Not Run

 Check for root Imports with missing range definitions

Not Run

 Check for root Outports with missing range definitions

Not Run

 Check usage of Assignment blocks

Not Run

 Check model object names

Not Run

 Check usage of Signal Routing blocks

Not Run

 Check for length of user-defined object names

Not Run

 Check data type of loop control variables

Not Run

 Check usage of bit-shift operations

Not Run

 Check usage of recursions

Not Run

 Check usage of remainder and reciprocal operations

Not Run

 Check usage of square root operations

Not Run

 Check usage of log and log10 operations

Not Run

 Check usage of Reciprocal Sqrt blocks

Not Run

 Check for divide-by-zero calculations

Not Run

 Check for unreachable and dead code

Not Run

 IEC 61508, IEC 62304, ISO 26262, ISO 25119, EN 50128 and EN 50657 Checks  0  0  0  0

 97

 Check usage of standardized MATLAB function headers

Not Run

 Check for MATLAB Function interfaces with inherited properties

Not Run

 Check MATLAB Function metrics

Not Run

 Check MATLAB Code Analyzer messages

Not Run

█ Check if/elseif/else patterns in MATLAB Function blocks

Not Run

█ Check switch statements in MATLAB Function blocks

Not Run

█ Check MATLAB functions not supported for code generation

Not Run

█ Check state machine type of Stateflow charts

Not Run

█ Check Stateflow charts for ordering of states and transitions

Not Run

█ Check Stateflow debugging options

Not Run

█ Check Stateflow charts for transition paths that cross parallel state boundaries

Not Run

█ Check for inappropriate use of transition paths

Not Run

█ Check naming of ports in Stateflow charts

Not Run

█ Check scoping of Stateflow data objects

Not Run

☒ Check usage of While Iterator blocks

Not Run

☒ Check usage of For and While Iterator subsystems

Not Run

☒ Check for blocks not recommended for C/C++ production code deployment

Not Run

☒ Check for inconsistent vector indexing methods

Not Run

☒ Check usage of variant blocks

Not Run

☒ Check for root Imports with missing properties

Not Run

☒ Check model file name

Not Run

☒ Check usage of lookup table blocks

Not Run

☒ Check safety-related solver settings for simulation time

Not Run

☒ Check Stateflow charts for uniquely defined data objects

Not Run

☒ Check global variables in graphical functions

Not Run

█ Check usage of Gain blocks

Not Run

█ Check for model elements that do not link to requirements

Not Run

█ Check safety-related settings for hardware implementation

Not Run

█ Check for parameter tunability ignored for referenced models

Not Run

█ Check for disabled and parameterized library links

Not Run

█ Check safety-related diagnostic settings for data store memory

Not Run

█ Check safety-related diagnostic settings for saving

Not Run

█ Check safety-related model referencing settings

Not Run

█ Check safety-related solver settings for solver options

Not Run

█ Check safety-related solver settings for tasking and sample-time

Not Run

☒ Check safety-related diagnostic settings for solvers

Not Run

☒ Check safety-related diagnostic settings for sample time

Not Run

☒ Check safety-related optimization settings for logic signals

Not Run

☒ Check safety-related block reduction optimization settings

Not Run

☒ Check safety-related optimization settings for application lifespan

Not Run

☒ Check safety-related optimization settings for data initialization

Not Run

☒ Check safety-related optimization settings for data type conversions

Not Run

☒ Check safety-related optimization settings for division arithmetic exceptions

Not Run

☒ Check safety-related optimization settings for specified minimum and maximum values

Not Run

☒ Check safety-related code generation settings for comments

Not Run

☒ Check safety-related code generation interface settings

Not Run

█ Check safety-related code generation settings for code style

Not Run

█ Check safety-related code generation identifier settings

Not Run

█ Check safety-related diagnostic settings for compatibility

Not Run

█ Check safety-related diagnostic settings for parameters

Not Run

█ Check safety-related diagnostic settings for Merge blocks

Not Run

█ Check safety-related diagnostic settings for model initialization

Not Run

█ Check safety-related diagnostic settings for data used for debugging

Not Run

█ Check safety-related diagnostic settings for signal connectivity

Not Run

█ Check safety-related diagnostic settings for bus connectivity

Not Run

█ Check safety-related diagnostic settings that apply to function-call connectivity

Not Run

 Check safety-related diagnostic settings for type conversions

Not Run

 Check safety-related diagnostic settings for model referencing

Not Run

 Check safety-related diagnostic settings for Stateflow

Not Run

 Check safety-related diagnostic settings for signal data

Not Run

 Check safety-related diagnostic settings for variants

Not Run

 Display model metrics and complexity report

Not Run

 Check for unconnected objects

Not Run

 Check usage of relational operators in MATLAB Function blocks

Not Run

 Check usage of logical operators and functions in MATLAB Function blocks

Not Run

 Check type and size of condition expressions

Not Run

 Metrics for generated code complexity

Not Run

 Check Stateflow charts for strong data typing

Not Run

 Check assignment operations in Stateflow charts

Not Run

 Check Stateflow charts for unary operators

Not Run

 Check usage of Abs blocks

Not Run

 Check usage of For Iterator blocks

Not Run

 Check usage of If blocks and If Action Subsystem blocks

Not Run

 Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Not Run

 Check usage of conditionally executed subsystems

Not Run

 Check relational comparisons on floating-point signals

Not Run

 Check usage of Relational Operator blocks

Not Run

 Check usage of Logical Operator blocks

Not Run

 Check usage of bitwise operations

Not Run

 Check usage of Merge blocks

Not Run

 Check data types for blocks with index signals

Not Run

 Check for root Imports with missing range definitions

Not Run

 Check for root Outports with missing range definitions

Not Run

 Check usage of Assignment blocks

Not Run

 Check model object names

Not Run

 Check usage of Signal Routing blocks

Not Run

 Check for length of user-defined object names

Not Run

 Check data type of loop control variables

Not Run

 Check usage of bit-shift operations

Not Run

 Display configuration management data

Not Run

 Check usage of recursions

Not Run

 Check usage of remainder and reciprocal operations

Not Run

 Check usage of square root operations

Not Run

 Check usage of log and log10 operations

Not Run

 Check usage of Reciprocal Sqrt blocks

Not Run

 Check for divide-by-zero calculations

Not Run

 Check for unreachable and dead code

Not Run

 MAB Checks  0  0  0  0  142

 Check for prohibited sink blocks

Not Run

█ Check whether block names appear below blocks

Not Run

█ Check for mixing basic blocks and subsystems

Not Run

█ Check usage of tunable parameters in blocks

Not Run

█ Check model diagnostic parameters

Not Run

█ Check the display attributes of block names

Not Run

█ Check display for port blocks

Not Run

█ Check usage of Relational Operator blocks

Not Run

█ Check for nondefault block attributes

Not Run

█ Check signal line labels

Not Run

█ Check for propagated signal labels

Not Run

-
- █ Check return value assignments in Stateflow graphical functions
Not Run
-

- █ Check for pointers in Stateflow charts
Not Run
-

- █ Check logical expressions in If blocks
Not Run
-

- █ Check for Simulink diagrams using nonstandard display attributes
Not Run
-

- █ Check input and output settings of MATLAB Functions
Not Run
-

- █ Check MATLAB code for global variables
Not Run
-

- █ Check use of Simulink in Stateflow charts
Not Run
-

- █ Check use of default variants
Not Run
-

- █ Check use of single variable variant conditionals
Not Run
-

- █ Check usage of restricted variable names
Not Run
-

- █ Check usage of character vector inside MATLAB Function block
Not Run

-
- █ Check usage of recommended patterns for Switch/Case statements
Not Run
-

- █ Check the number of function calls in MATLAB Function blocks
Not Run
-

- █ Check lines of code in MATLAB Functions
Not Run
-

- █ Check nested conditions in MATLAB Functions
Not Run
-

- █ Check Implement logic signals as Boolean data (vs. double)
Not Run
-

- █ Check usage of Discrete-Time Integrator block
Not Run
-

- █ Check default transition placement in Stateflow charts
Not Run
-

- █ Check for avoiding algebraic loops between subsystems
Not Run
-

- █ Check for missing ports in Variant Subsystems
Not Run
-

- █ Check for cascaded Unit Delay blocks
Not Run
-

 Check file names

Not Run

 Check folder names

Not Run

 Check port block names

Not Run

 Check subsystem names

Not Run

 Check character usage in block names

Not Run

 Check definition of signal labels

Not Run

 Check Signal name propagation

Not Run

 Check Signed Integer Division Rounding mode

Not Run

 Check usage of State names

Not Run

 Check usage of Stateflow comments

Not Run

 Check execution timing for default transition path

Not Run

█ Check usage of Merge block

Not Run

█ Check usage of internal transitions in Stateflow states

Not Run

█ Check usage of transition conditions in Stateflow transitions

Not Run

█ Check block orientation

Not Run

█ Check usage of parentheses in Stateflow transitions

Not Run

█ Check usable number for first index

Not Run

█ Check character usage in signal names and bus names

Not Run

█ Check uniqueness of Stateflow State and Data names

Not Run

█ Check length of model file name

Not Run

█ Check length of folder name at every level of model path

Not Run

☒ Check length of subsystem names

Not Run

☒ Check length of Import and Outport names

Not Run

☒ Check length of signal and bus names

Not Run

☒ Check length of block names

Not Run

☒ Check entry formatting in State blocks in Stateflow charts

Not Run

☒ Check prohibited combination of state action and flow chart

Not Run

☒ Check repetition of Action types

Not Run

☒ Check for unused data in Stateflow Charts

Not Run

☒ Check updates to variables used in state transition conditions

Not Run

☒ Check condition actions and transition actions in Stateflow

Not Run

☒ Check uniqueness of State names

Not Run

█ Check if blocks are shaded in the model

Not Run

█ Check operator order of Product blocks

Not Run

█ Check icon shape of Logical Operator blocks

Not Run

█ Check if tunable block parameters are defined as named constants

Not Run

█ Check default/else case in Switch Case blocks and If blocks

Not Run

█ Check usage of internal transition

Not Run

█ Check usage of parallel states

Not Run

█ Check scope of data in parallel states

Not Run

█ Check indentation of code in Stateflow states

Not Run

█ Check for unexpected backtracking in state transitions

Not Run

☒ Check usage of Lookup Tables

Not Run

☒ Check for parentheses in Fcn block expressions

Not Run

☒ Check for usage of text inside states

Not Run

☒ Check for unconnected objects in Stateflow Charts

Not Run

☒ Check position of label string in Stateflow transition

Not Run

☒ Check duplication of Simulink Data names

Not Run

☒ Check Model Description

Not Run

☒ Check Stateflow chart action language

Not Run

☒ Check character usage in Stateflow data names

Not Run

☒ Check length of Stateflow data name

Not Run

☒ Check diagnostic settings for incorrect calculation results

Not Run

█ Check usage of transitions to external states

Not Run

█ Check order of state action types

Not Run

█ Check usage of numeric literals in Stateflow

Not Run

█ Check position of comments in transition labels

Not Run

█ Check trigger signal names

Not Run

█ Check usage of unconditional transitions in flow charts

Not Run

█ Check for comments in unconditional transitions

Not Run

█ Check output data type of operation blocks

Not Run

█ Check terminal junctions in Stateflow

Not Run

█ Check if state action type 'exit' is used in the model

Not Run

☒ Check for consistency in model element names

Not Run

☒ Check usage of graphical functions in Stateflow

Not Run

☒ Check for sample time setting

Not Run

☒ Check usage of Sum blocks

Not Run

☒ Check Indexing Mode

Not Run

☒ Check position of signal labels

Not Run

☒ Check position of Inport and Outport blocks

Not Run

☒ Check definition of Stateflow events

Not Run

☒ Check for usage of Data Store Memory blocks

Not Run

☒ Check for MATLAB expressions in Stateflow blocks

Not Run

☒ Check definition of Stateflow data

Not Run

☒ Check signal flow in model

Not Run

☒ Check Stateflow transition appearance

Not Run

☒ Check position of conditional blocks and iterator blocks

Not Run

☒ Check signal line connections

Not Run

☒ Check usage of events in Stateflow charts

Not Run

☒ Check Model font settings

Not Run

☒ Check usage of Simulink functions in Stateflow

Not Run

☒ Check for exclusive states in state machines

Not Run

☒ Check for unconnected signal lines and blocks

Not Run

☒ Check transitions in Stateflow flow charts

Not Run

 Check scope of From and Goto blocks

Not Run

 Check usage of Switch blocks

Not Run

 Check usage of unary minus operations in Stateflow charts

Not Run

 Check usage of floating-point expressions in Stateflow charts

Not Run

 Check usage of enumerated values

Not Run

 Check for names of Stateflow ports and associated signals

Not Run

 Check settings for data ports in Multiport Switch blocks

Not Run

 Check input and output datatype for Switch blocks

Not Run

 Check usage of fixed-point data type with non-zero bias

Not Run

 Check signs of input signals in product blocks

Not Run

 Check type setting by data objects

Not Run

 Check usage of the Saturation blocks

Not Run

 Check prohibited comparison operation of logical type signals

Not Run

 Check usage of Memory and Unit Delay blocks

Not Run

 Check character usage in parameter names

Not Run

 Check length of parameter names

Not Run

 Check undefined initial output for conditional subsystems

Not Run

 Check comparison of floating point types in Simulink

Not Run

 Check unused data in Simulink Model

Not Run

 Check for implicit type casting in Stateflow

Not Run

 Check for use of C-style comment symbols

Not Run

 Check Stateflow operators

Not Run

 Check fundamental logical and numerical operations

Not Run

 Check usage of vector and bus signals

Not Run

 Check connections between structural subsystems

Not Run

 Check for division by zero in Simulink

Not Run

 JMAAB Checks  0  0  0  0  0  115

 Check usage of tunable parameters in blocks

Not Run

 Check use of single variable variant conditionals

Not Run

 Check usage of character vector inside MATLAB Function block

Not Run

 Check usage of Discrete-Time Integrator block

Not Run

 Check default transition placement in Stateflow charts

Not Run

☒ Check for avoiding algebraic loops between subsystems

Not Run

☒ Check for missing ports in Variant Subsystems

Not Run

☒ Check for cascaded Unit Delay blocks

Not Run

☒ Check file names

Not Run

☒ Check folder names

Not Run

☒ Check port block names

Not Run

☒ Check subsystem names

Not Run

☒ Check character usage in block names

Not Run

☒ Check definition of signal labels

Not Run

☒ Check Signal name propagation

Not Run

☒ Check Signed Integer Division Rounding mode

Not Run

█ Check usage of State names

Not Run

█ Check usage of Stateflow comments

Not Run

█ Check execution timing for default transition path

Not Run

█ Check usage of Merge block

Not Run

█ Check usage of internal transitions in Stateflow states

Not Run

█ Check usage of transition conditions in Stateflow transitions

Not Run

█ Check block orientation

Not Run

█ Check usage of parentheses in Stateflow transitions

Not Run

█ Check usable number for first index

Not Run

█ Check character usage in signal names and bus names

Not Run

☒ Check uniqueness of Stateflow State and Data names

Not Run

☒ Check length of model file name

Not Run

☒ Check length of folder name at every level of model path

Not Run

☒ Check length of subsystem names

Not Run

☒ Check length of Import and Outport names

Not Run

☒ Check length of signal and bus names

Not Run

☒ Check length of block names

Not Run

☒ Check entry formatting in State blocks in Stateflow charts

Not Run

☒ Check prohibited combination of state action and flow chart

Not Run

☒ Check repetition of Action types

Not Run

☒ Check for unused data in Stateflow Charts

Not Run

█ Check updates to variables used in state transition conditions

Not Run

█ Check condition actions and transition actions in Stateflow

Not Run

█ Check uniqueness of State names

Not Run

█ Check if blocks are shaded in the model

Not Run

█ Check operator order of Product blocks

Not Run

█ Check icon shape of Logical Operator blocks

Not Run

█ Check if tunable block parameters are defined as named constants

Not Run

█ Check default/else case in Switch Case blocks and If blocks

Not Run

█ Check usage of internal transition

Not Run

█ Check usage of parallel states

Not Run

☒ Check scope of data in parallel states

Not Run

☒ Check indentation of code in Stateflow states

Not Run

☒ Check for unexpected backtracking in state transitions

Not Run

☒ Check usage of Lookup Tables

Not Run

☒ Check for parentheses in Fcn block expressions

Not Run

☒ Check for usage of text inside states

Not Run

☒ Check for unconnected objects in Stateflow Charts

Not Run

☒ Check position of label string in Stateflow transition

Not Run

☒ Check duplication of Simulink Data names

Not Run

☒ Check Model Description

Not Run

☒ Check Stateflow chart action language

Not Run

█ Check character usage in Stateflow data names

Not Run

█ Check length of Stateflow data name

Not Run

█ Check diagnostic settings for incorrect calculation results

Not Run

█ Check usage of transitions to external states

Not Run

█ Check order of state action types

Not Run

█ Check usage of numeric literals in Stateflow

Not Run

█ Check position of comments in transition labels

Not Run

█ Check trigger signal names

Not Run

█ Check usage of unconditional transitions in flow charts

Not Run

█ Check for comments in unconditional transitions

Not Run

☒ Check output data type of operation blocks

Not Run

☒ Check terminal junctions in Stateflow

Not Run

☒ Check if state action type 'exit' is used in the model

Not Run

☒ Check for consistency in model element names

Not Run

☒ Check usage of graphical functions in Stateflow

Not Run

☒ Check for sample time setting

Not Run

☒ Check usage of Sum blocks

Not Run

☒ Check Indexing Mode

Not Run

☒ Check position of signal labels

Not Run

☒ Check position of Inport and Outport blocks

Not Run

☒ Check definition of Stateflow events

Not Run

█ Check for usage of Data Store Memory blocks

Not Run

█ Check for MATLAB expressions in Stateflow blocks

Not Run

█ Check definition of Stateflow data

Not Run

█ Check signal flow in model

Not Run

█ Check Stateflow transition appearance

Not Run

█ Check position of conditional blocks and iterator blocks

Not Run

█ Check signal line connections

Not Run

█ Check usage of events in Stateflow charts

Not Run

█ Check Model font settings

Not Run

█ Check usage of Simulink functions in Stateflow

Not Run

 Check for exclusive states in state machines

Not Run

 Check for unconnected signal lines and blocks

Not Run

 Check transitions in Stateflow flow charts

Not Run

 Check scope of From and Goto blocks

Not Run

 Check usage of floating-point expressions in Stateflow charts

Not Run

 Check usage of enumerated values

Not Run

 Check settings for data ports in Multiport Switch blocks

Not Run

 Check input and output datatype for Switch blocks

Not Run

 Check usage of fixed-point data type with non-zero bias

Not Run

 Check signs of input signals in product blocks

Not Run

 Check type setting by data objects

Not Run

 Check usage of the Saturation blocks

Not Run

 Check prohibited comparison operation of logical type signals

Not Run

 Check usage of Memory and Unit Delay blocks

Not Run

 Check character usage in parameter names

Not Run

 Check length of parameter names

Not Run

 Check undefined initial output for conditional subsystems

Not Run

 Check comparison of floating point types in Simulink

Not Run

 Check unused data in Simulink Model

Not Run

 Check for implicit type casting in Stateflow

Not Run

 Check for use of C-style comment symbols

Not Run

 Check Stateflow operators

Not Run

 Check fundamental logical and numerical operations

Not Run

 Check usage of vector and bus signals

Not Run

 Check connections between structural subsystems

Not Run

 Check for division by zero in Simulink

Not Run

 Model Metrics 

 Simulink block metric

Not Run

 Subsystem metric

Not Run

 Library link metric

Not Run

 Effective lines of MATLAB code metric

Not Run

 Stateflow chart objects metric

Not Run

█ Lines of code for Stateflow blocks metric

Not Run

█ Nondescriptive block name metric

Not Run

█ Data and structure layer separation metric

Not Run

█ Subsystem depth metric

Not Run

█ Cyclomatic complexity metric

Not Run

📁 By Task ⚡11 ✖323 ⚠291 ✅0 ✓426 ━0

📁 Modeling Physical Systems ⚡0 ✖1 ⚠0 ✅0 ✓1 ━0

✓ *Check consistency of block parameter units*

Identify Simscape blocks with ambiguous setting of parameter units. For example, a block parameter expected in 'Hz' may be specified in the dialog with unit of 'rad/s'. Such settings could lead to unexpected conversion factors applied to the numerical value.

Passed

No Simscape blocks with ambiguous unit setting found in the model.

✗ *Check for dry hydraulic nodes*

Error occurred during model compile.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled

Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

Replacing Blocks That Will Be Removed

 Identify Environment Controller blocks to be replaced with Variant Source blocks

Passed

The model does not contain any Environment Controller blocks.

Simulation Accuracy

 Check for non-continuous signals driving derivative ports

Error occurred during model compile.

Simulation Runtime Accuracy Diagnostics -0 X0 A0 M0 ✓2 D0

Runtime diagnostics for S-functions

Passed

Check if Read/Write diagnostics are enabled for Data Store blocks

Passed

Managing Data Store Memory Blocks -0 X2 A1 M0 ✓1 D0

Check Data Store Memory blocks for multitasking, strong typing, and shadowing issues

Duplicate data store names checking is not set to 'error'. Duplicate usage of data store names can lead to unintended shadowing of data stores of higher model scope. Consider changing the Duplicate data store names setting to 'error'.

Check data store block sample times for modeling errors

Error occurred during model compile.

Check for potential ordering issues involving data store access

Error occurred during model compile.

Check for relative execution order change for Data Store Read and Data Store Write blocks

The system does not have any Data Store Read or Data Store Write blocks.

Simulink Model File Integrity -0 X0 A0 M0 ✓1 D0

[Check Model History properties](#)

Check models for edited Model History property values

Check that parameters in the Model Properties dialog History pane use the default tags. In the MDL file format you can configure some model properties to make use of source control tool keyword substitution. If you save your model in SLX format, source control tools cannot perform keyword substitution. Any information in the model file from such keyword substitution is cached when you first save the MDL file as SLX, and is never updated again. The Model Properties History pane and any Model Info blocks in your model show stale information from then on.

Passed

This model uses the default value for property ModifiedByFormat.

Passed

This model uses the default value for property ModifiedDateFormat.

Passed

This model uses the default value for property ModelVersionFormat.



[Check S-functions in the model](#)

There are no user-defined S-functions in the model.



[Identify unit mismatches in the model](#)

Error occurred during model compile.

[Identify automatic unit conversions in the model](#)

Error occurred during model compile.

[Identify disallowed unit systems in the model](#)

Error occurred during model compile.

[Identify undefined units in the model](#)

Error occurred during model compile.

 *Identify ambiguous units in the model*

Error occurred during model compile.

 Modeling Signals and Parameters using Buses  0  1  0  0  2  0

 *Check for optimal bus virtuality*

Passed

 *Check structure parameter usage with bus signals*

This test is skipped because it requires an activated Simulink Coder product

 *Check bus signals treated as vectors*

Error occurred during model compile.

 Code Generation Efficiency  0  3  2  0  6  0

 *Check optimization settings*

Check optimization settings

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	StateBitsets	off	on
Warning	DataBitsets	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 *Identify blocks using one-based indexing*

Check the model for blocks configured for one-based indexing

Passed

All blocks in the model use zero-based indexing.

 *Identify questionable software environment specifications*

Passed

 *Identify lookup table blocks that generate expensive out-of-range checking code*

Identify block parameter violations.

Warning

The following blocks have block parameter violations:

- SelfBalancingEV_V2/ABS control System/mu-slip lookup table

Recommended Action

Set the block parameter values to the recommended values.

 *Identify questionable code instrumentation (data I/O)*

Passed

 *Check output types of logic blocks*

Identify logic blocks that are outputting non-Boolean data types.

Passed

All logic blocks are being used appropriately.

-  Check configuration parameters for generation of inefficient saturation code

Passed

-  Identify blocks that generate expensive rounding code

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 *Identify questionable fixed-point operations*

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 *Identify blocks that generate expensive fixed-point and saturation code*
Error occurred during model compile.

Identify blocks generating inefficient algorithms

Passed

No inefficient algorithms found in the model.

Modeling Single-Precision Systems 0 1 0 0 0

Identify questionable operations for strict single-precision design

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

Migrating to Simplified Initialization mode 0 4 0 0 0 0

Check usage of Merge blocks

Error occurred during model compile.

Check usage of Outport blocks

Error occurred during model compile.

Check usage of Discrete-Time Integrator blocks

Error occurred during model compile.

Check model settings for migration to simplified initialization mode

Error occurred during model compile.

Row-Major Code Generation 0 2 0 0 1 0

Identify blocks generating inefficient algorithms

Passed

No inefficient algorithms found in the model.

Check for blocks not supported for row-major code generation

Error occurred during model compile.

Identify TLC S-Functions with unset array layout

Error occurred during model compile.

Model Referencing 0 1 0 0 7 0

- Check for model reference configuration mismatch*

Passed

- Check diagnostic settings ignored during accelerated model reference simulation*

The configuration parameter settings passed the check.

- Check code generation identifier formats used for model reference*

The configuration parameter settings passed the check.

- Check for parameter tunability information ignored for referenced models*

Passed

- Check for implicit signal resolution*

Passed

- Check bus signals treated as vectors*

Error occurred during model compile.

- Check root model Import block specifications*

Passed

- Check for large number of function arguments from virtual bus across model reference boundary*

No referenced models found.

Managing Library Links And Variants 0 0 2 2 0

- Identify disabled library links*

Warning

The blocks listed below are disabled library links. To resolve the link, right-click the block in the Simulink diagram, and choose 'Restore Link' from the 'Library Link' menu.

- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1"
title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1"
-



Passed



The following blocks are unresolved library links. In each case, either the library cannot be found, or the library doesn't contain a block of the specified name.

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3

SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration

SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame

- ✓ *Identify configurable subsystem blocks in the model for converting to variant subsystem blocks.*
Identify and upgrade Configurable Subsystem blocks in the model or subsystem level.

Passed

No configurable subsystem blocks found.

📁 Data Transfer Efficiency ⚡0 ✘1 ⚠0 ✎0 ✓0 ⌂0

- ✗ *Check Delay, Unit Delay and Zero-Order Hold blocks for rate transition*

Error occurred during model compile.

📁 Modeling Standards for MISRA C:2012 ⚡0 ✘6 ⚠3 ✎0 ✓4 ⌂0

- ⚠ *Check configuration parameters for MISRA C:2012*

Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcnS	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile
Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile
Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	

Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile
Warning	InstructionSetExtensions	SSE2	None	

Λ Less

Recommended Action

Modify the configuration parameters listed above to the recommended values.



Check for blocks not recommended for C/C++ production code deployment

Block not supported for code generation

Warning

The following blocks are not supported or not recommended for C/C++ production code deployment:

- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/ABS control System/Stop Simulation
- SelfBalancingEV_V2/ABS control System/stopping distance
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
-
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Thermal Management/PID Controller
- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/Correction Generator/initial disturbance

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Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

 *Check for blocks not recommended for MISRA C:2012*

Passed

 *Check for unsupported block names*

Remove / characters in block name.

Warning

The following block names contain one or more "/":

-
- SelfBalancingEV_V2/System Switch/System Status ON//OFF
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF
- SelfBalancingEV_V2/ON//OFF

Recommended Action

Replace or remove "/" characters in block names.

 *Check usage of Assignment blocks*

Passed

 *Check for switch case expressions without a default case*

Identify switch case expressions that do not have a default case.

Passed

All switch case expressions have default cases.

 *Check for missing error ports in AUTOSAR receiver interfaces*

Identify AUTOSAR receiver interface ports that do not have a matching error port.

Passed

Model is not configured as an AUTOSAR target.

Check for bitwise operations on signed integers

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 *Check for recursive function calls*

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 *Check for equality and inequality operations on floating-point values*

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation

Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 *Check for missing const qualifiers in model functions*
Error occurred during model compile.

 *Check integer word lengths*
Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib'

referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

-  [Check bus object names that are used as bus element names](#)
Error occurred during model compile.

 Modeling Standards for Secure Coding (CERT C, CWE, ISO/IEC TS 17961)  0  10  6  0

-  [Check configuration parameters for secure coding standards](#)
Identify configuration parameters that might impact secure coding standards compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	

Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiagram)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile

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Recommended Action

Modify the configuration parameters listed above to the recommended values.

 *Check for blocks not recommended for C/C++ production code deployment*

Block not supported for code generation

Warning

The following blocks are not supported or not recommended for C/C++ production code deployment:

- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/ABS control System/Stop Simulation
- SelfBalancingEV_V2/ABS control System/stopping distance

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
-
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Thermal Management/PID Controller
- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/Correction Generator/initial disturbance

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Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

 *Check for blocks not recommended for secure coding standards*

Passed

 *Check usage of Assignment blocks*

Passed

 *Check for switch case expressions without a default case*

Identify switch case expressions that do not have a default case.

Passed

All switch case expressions have default cases.

 *Check for bitwise operations on signed integers*

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to

load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 *Check for equality and inequality operations on floating-point values*

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by

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 *Check integer word lengths*

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars

/PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

High-Integrity Systems 0 7 4 0 3 0

Simulink 0 6 1 0 2 0

Check usage of Abs blocks

Error occurred during model compile.

Check usage of remainder and reciprocal operations

Error occurred during Simulink Design Verifier analysis.Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation.Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of log and log10 operations

Error occurred during Simulink Design Verifier analysis.Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation.Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 **Check usage of While Iterator blocks**

Identify While Iterator blocks that do not have a positive value for the maximum number of iterations.

Passed

No While Iterator blocks found that might cause infinite loops

 **Check for blocks not recommended for C/C++ production code deployment**

Identify blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/Stop Simulation
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Signal Builder1

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

blocks not supported by code generation or not recommended for C/C++ production code deployment.

Identify

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/ABS control System/stopping distance
-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Thermal Management/PID Controller

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

1. Consider using the Model Discretizer to map these continuous blocks into discrete equivalents that support code generation. From a model, select **Model Discretizer** to access the Model Discretizer.
2. Not recommended for production code.

 **Check data types for blocks with index signals**

Error occurred during model compile.

 **Check usage of Reciprocal Sqrt blocks**

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 **Check global variables in graphical functions**

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

 Check usage of bit-shift operations

Error occurred during model compile.

 Configuration  0  0  2  0  0  0

 Check safety-related optimization settings for data type conversions

Check optimization settings in the model configuration that apply to data type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	EfficientFloat2IntCast	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related optimization settings for division arithmetic exceptions

Check optimization settings in the model configuration that apply to division arithmetic exceptions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	NoFixptDivByZeroProtection	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Naming 0 1 0 0 1 0

Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.

Check configuration parameters for MISRA C:2012

Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile
Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile
Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	

Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile
Warning	InstructionSetExtensions	SSE2	None	

[^ Less](#)

Recommended Action

Modify the configuration parameters listed above to the recommended values.

 Upgrading to the Current Simulink Version  0  0  1  0  0  0

 [Open the Upgrade Advisor](#)

Warning

To check for upgrade issues, open the Upgrade Advisor.

Recommended Action

Click the link below to close the Model Advisor and open the Upgrade Advisor for SelfBalancingEV_V2.

[Open the Upgrade Advisor](#)

 Modeling Standards for DO-178C/DO-331  0  34  33  0  32  0

 [Display model version information](#)

Error occurred during model compile.

High-Integrity Systems 0 33 31 0 32 0

Simulink 0 24 4 0 8 0

Check usage of Abs blocks

Error occurred during model compile.

Check usage of remainder and reciprocal operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of square root operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of log and log10 operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of While Iterator blocks

Identify While Iterator blocks that do not have a positive value for the maximum number of iterations.

Passed

No While Iterator blocks found that might cause infinite loops

-
-  Check usage of For and While Iterator subsystems
Identify sample time-dependent blocks in While and For Iterator subsystems.

Passed

No sample time-dependent blocks in For or While Iterator subsystems.

-  Check usage of For Iterator blocks

Error occurred during model compile.

-  Check usage of If blocks and If Action Subsystem blocks

Error occurred during model compile.

-  Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Error occurred during model compile.

-  Check usage of conditionally executed subsystems

Error occurred during model compile.

-  Check usage of Merge blocks

Error occurred during model compile.

-  Check relational comparisons on floating-point signals

Error occurred during model compile.

 Check usage of Relational Operator blocks

Error occurred during model compile.

 Check usage of Logical Operator blocks

Error occurred during model compile.

 Check usage of bitwise operations

Error occurred during model compile.

 Check for blocks not recommended for C/C++ production code deployment

Identify blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/Stop Simulation
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Signal Builder1

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/ABS control System/stopping distance
-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Thermal Management/PID Controller

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

1. Consider using the Model Discretizer to map these continuous blocks into discrete equivalents that support code generation. From a model, select Model Discretizer to access the Model Discretizer.
2. Not recommended for production code.

 Check for inconsistent vector indexing methods

Identify inconsistent usage of vector indexing methods across the model or subsystem.

Passed

No blocks found using inconsistent indexing modes.

-  Check data types for blocks with index signals

Error occurred during model compile.

-  Check usage of variant blocks

Check variant block settings that might result in code that doesn't trace back to requirements.

Passed

No variant blocks have "VariantActivationTime" set to 'code compile'.

-  Check usage of lookup table blocks

Check for Lookup Table blocks, Prelookup blocks and Interpolation blocks that do not generate out-of-range checking code.

Passed

No lookup table blocks found to not generate out-of-range checking code.

-  Check usage of Signal Routing blocks

Error occurred during model compile.

-  Check for root Imports with missing properties

Identify Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions. Import block properties are specified with block parameters or Simulink signal data objects that explicitly resolve to the connected signal lines.

Passed

There are no Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions

-  Check for root Imports with missing range definitions

Error occurred during model compile.

-  Check for root Outports with missing range definitions

Error occurred during model compile.

-  Check usage of Reciprocal Sqrt blocks

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

-  Check usage of Assignment blocks

Error occurred during model compile.

-  Check global variables in graphical functions

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

-  Check usage of Gain blocks

Identify Gain blocks with value which resolves to 1.

Warning

The following Gain blocks have value which resolves to 1.

- SelfBalancingEV_V2/ABS control System/Relative Slip
-
-
-

-

Recommended Action

Consider remodeling to remove the Gain blocks with values that resolve to 1

 Check for length of user-defined object names

Error occurred during model compile.

 Check data type of loop control variables

Error occurred during model compile.

 Check for divide-by-zero calculations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check for parameter tunability ignored for referenced models

Check for models parameter tunability information specified using Model Parameter Configuration dialog boxes.

Passed

No parameters found that lose the tunability defined in the referenced models.

 Check usage of bit-shift operations

Error occurred during model compile.

 Check safety-related diagnostic settings for variants

Check diagnostic settings in the model configuration that apply to variants and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Variant condition mismatch at signal source and destination (VariantConditionMismatch)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check for disabled and parameterized library links

Identify disabled and parameterized library links in the model.

Warning

The following blocks are disabled library links:

-

Recommended Action

To resolve the link:

1. On the Simulink canvas, select an appropriate block.

Check for unreachable and dead code



 Check state machine type of Stateflow charts

Passed

Identify Stateflow charts that do not use explicit ordering of parallel states and transitions.

Passed

No Stateflow Charts found that deviate from recommended state/transition execution order settings.

 Check usage of recursions

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled

Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 **Check Stateflow debugging options**

Identify whether Stateflow debugging options are set appropriately.

Warning

The following Stateflow debugging options are not set appropriately:

Parameter	Current Value	Recommended Values
Wrap on overflow (IntegerOverflowMsg)	warning	error

Simulation range checking (SignalRangeChecking)	none	error
---	------	-------

Recommended Action

Change the Stateflow debugging options to the recommended value.

- ✓ Check Stateflow charts for transition paths that cross parallel state boundaries

Identify transition paths that cross parallel state boundaries in Stateflow charts.

Passed

No transition paths crossing parallel state boundaries were found in Stateflow charts.

- ✓ Check for inappropriate use of transition paths

Identify transition paths that go into and out of a state without ending on a substate.

Passed

No transition paths found that go into and out of a state without ending on a substate.

- ✗ Check Stateflow charts for strong data typing

Error occurred during model compile.

- ✓ Check naming of ports in Stateflow charts

Identify mismatches between names of Stateflow ports and associated signals.

Passed

There are no name mismatches between Stateflow ports and associated signals

- ✓ Check scoping of Stateflow data objects

Identify Stateflow data objects with local scope that are not scoped at the chart level or below.

Passed

All Stateflow data objects are properly scoped.

-
- ✓ Check Stateflow charts for uniquely defined data objects

Identify local data identifiers that are defined in multiple scopes within a chart.

Passed

No Stateflow data identifiers found to be defined in multiple scopes.

- ✗ Check assignment operations in Stateflow charts

Error occurred during model compile.

- ✗ Check Stateflow charts for unary operators

Error occurred during model compile.



-
- ✓ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

Passed

No MATLAB function blocks found without standardized function headers.

- ✓ Check for MATLAB Function interfaces with inherited properties

Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity or data type properties.

Passed

No MATLAB Function interfaces with inherited complexity or data type properties found.

- ✓ Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

Passed

No MATLAB Function blocks found that violate code and complexity metrics.

 Check MATLAB Code Analyzer messages

Check MATLAB functions for %#codegen directive, MATLAB Code Analyzer messages, and justification message IDs.

Passed

No MATLAB Function blocks found with Code Analyzer messages, missing %#codegen directive or inappropriate usage of justification message IDs.

 Check if/elseif/else patterns in MATLAB Function blocks

Identify if/elseif/else patterns without appropriate else conditions in embedded MATLAB code.

Passed

No inappropriate if/elseif/else patterns found.

 Check switch statements in MATLAB Function blocks

Identify inappropriately used switch statements in embedded MATLAB code.

Passed

No inappropriately used switch statements found.

 Check usage of relational operators in MATLAB Function blocks

Error occurred during model compile.

 Check usage of logical operators and functions in MATLAB Function blocks

Error occurred during model compile.

 Check type and size of condition expressions

Error occurred during model compile.



Check MATLAB functions not supported for code generation

Identify MATLAB functions that are not supported for code generation.

Passed

All identified MATLAB functions are supported for code generation.



Metrics for generated code complexity

Error occurred during model compile.



Check safety-related diagnostic settings for data store memory

Check diagnostic settings in the model configuration that apply to data store memory and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect read before write (ReadBeforeWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after read (WriteAfterReadMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after write (WriteAfterWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Duplicate data store names (UniqueDataStoreMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for saving**

Check diagnostic settings in the model configuration that apply to saving model files.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block diagram contains disabled library links (SaveWithDisabledLinksMsg)	warning	error
Warning	Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related model referencing settings**

Check model referencing settings in the model configuration that might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Rebuild (UpdateModelReferenceTargets)	IfOutOfDateOrStructuralChange	AssumeUpToDate, IfOutOfDateOrStructuralChange
Pass	Pass fixed-size scalar root inputs by value for code generation (ModelReferencePassRootInputsByReference) *	on	on
Pass	Minimize algebraic loop occurrences (ModelReferenceMinAlgLoopOccurrences)	off	off

Recommended Action

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

⚠ Check safety-related code generation settings for comments

Check code generation settings in the model configuration that apply comments and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ShowEliminatedStatement	off	on	GenerateComments
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ForceParamTrailComments	off	on	GenerateComments
Warning	ReqInCode	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, GenerateComments

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related code generation interface settings

Check code generation interface settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	SupportNonFinite	on	off	
Warning	SupportAbsoluteTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	IncludeMdlTerminateFcn	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SuppressErrorStatus	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
Warning	MatFileLogging	on	off	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related solver settings for simulation time](#)

Identify if the model Start time is set to 0 and Stop time is less than the Application Life Span.

Passed

No issues found with solver settings for simulation time.

 [Check safety-related solver settings for solver options](#)

Check solver settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Type (SolverType)	Variable-step	Fixed-step
Warning	Solver (SolverName)	VariableStepAuto	FixedStepDiscrete

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ Check safety-related solver settings for tasking and sample-time

Check solver settings in the model configuration that apply to tasking and sample-time constraints and might impact safety.

Passed

All constraints on model configuration parameters have been met.

-
- ⚠ Check safety-related diagnostic settings for solvers

Check diagnostic settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Algebraic loop (AlgebraicLoopMsg)	warning	error
Warning	Minimize algebraic loop (ArtificialAlgebraicLoopMsg)	warning	error
Warning	Block priority violation (BlockPriorityViolationMsg)	warning	error
Warning	Automatic solver parameter selection (SolverPrmCheckMsg)	none	error
Warning	State name clash (StateNameClashWarn)	none	warning

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for sample time

Check diagnostic settings in the model configuration that apply to sample time and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values

Warning	Source block specifies -1 sample time (InheritedTsInSrcMsg)	warning	error
Warning	Enforce sample times specified by Signal Specification blocks (SigSpecEnsureSampleTimeMsg)	warning	error
Warning	Single task data transfer (SingleTaskRateTransMsg)	none	error
Warning	Tasks with equal priority (TasksWithSamePriorityMsg)	warning	error
Warning	Unspecified inheritability of sample time (UnknownTslnhSupMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ Check safety-related optimization settings for logic signals

Check optimization settings in the model configuration that apply to logic signals and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Implement logic signals as Boolean data (vs. double) (BooleanDataType)	on	on

 **Check safety-related block reduction optimization settings**

Check block reduction optimization settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block reduction (BlockReduction)	on	off

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related code generation settings for code style**

Check code generation settings in the model configuration that apply to code style and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites

Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Maximum, Standards	SystemTargetFile
Warning	PreserveExpressionOrder	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related optimization settings for application lifespan

Check optimization settings in the model configuration that apply to application lifespan and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Application lifespan (days) (LifeSpan)	auto	inf

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-  **Check safety-related code generation identifier settings**
Check code generation identifier settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Not Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target		
Warning	MangleLength	<i>Prerequisite constraint not met.</i>		1, 2, 3	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
-  **Check safety-related optimization settings for data initialization**
Check optimization settings in the model configuration that apply to data initialization and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ZeroExternalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging
Warning	ZerointernalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

⚠ Check safety-related optimization settings for data type conversions

Check optimization settings in the model configuration that apply to data type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	EfficientFloat2IntCast	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for division arithmetic exceptions

Check optimization settings in the model configuration that apply to division arithmetic exceptions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	NoFixptDivByZeroProtection	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for specified minimum and maximum values

Check optimization settings in the model configuration that apply to specified minimum and maximum values and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	UseSpecifiedMinMax	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

✓ Check safety-related settings for hardware implementation

Check 'Byte ordering' and 'Signed integer division rounds to' parameters

Identify inconsistencies or underspecification of hardware attributes that can lead to incorrect and inefficient generated code.

Passed

Target specification is consistent.

Check whether 'Production hardware' and 'Test hardware' match

Search for 'Test hardware is the same as production hardware' in the Configuration Parameters dialog box and check if it is selected. If it is cleared, identify whether target specifications match.

Passed

'Test hardware is the same as production hardware' is selected or is cleared and the target specifications match.

Check safety-related diagnostic settings for compatibility

Check diagnostic settings in the model configuration that affect compatibility and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	S-function upgrades needed (SFcnCompatibilityMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for parameters

Check diagnostic settings in the model configuration that apply to parameters and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect underflow (ParameterUnderflowMsg)	none	error
Warning	Detect precision loss (ParameterPrecisionLossMsg)	warning	error
Warning	Detect loss of tunability (ParameterTunabilityLossMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for Merge blocks

Check diagnostic settings in the model configuration that apply to Merge blocks and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values

Pass	Detect multiple driving blocks executing at the same time step (MergeDetectMultiDrivingBlocksExec)	error	error
------	--	-------	-------

✓ Check safety-related diagnostic settings for model initialization

Check diagnostic settings in the model configuration that affect model initialization and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Underspecified initialization detection (UnderspecifiedInitializationDetection)	Simplified	Simplified

⚠ Check safety-related diagnostic settings for data used for debugging

Check diagnostic settings in the model configuration that apply to data used for debugging and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for signal connectivity**

Check diagnostic settings in the model configuration that apply to signal connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Signal label mismatch (SignalLabelMismatchMsg)	none	error
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error
Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error
Warning	Unconnected line (UnconnectedLineMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related diagnostic settings for bus connectivity](#)

Check diagnostic settings in the model configuration that apply to bus connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unspecified bus object at root Outport block (RootOutportRequireBusObject)	warning	error
Warning	Element name mismatch (BusObjectLabelMismatch)	warning	error
Warning	Bus signal treated as vector (StrictBusMsg)	ErrorLevel1	ErrorOnBusTreatedAsVector
Warning	Non-bus signals treated as bus signals (NonBusSignalsTreatedAsBus)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-  Check safety-related diagnostic settings that apply to function-call connectivity

Check diagnostic settings in the model configuration that apply to function-call connectivity and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	InvalidFcnCallConnMsg	error	error
Pass	Context-dependent inputs (FcnCallInpInsideContextMsg)	error	error

-
-  Check safety-related diagnostic settings for type conversions

Check diagnostic settings in the model configuration that apply to type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unnecessary type conversions (UnnecessaryDatatypeConvMsg)	none	warning

Warning	Vector/matrix block input conversion (VectorMatrixConversionMsg)	none	error
---------	---	------	-------

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for model referencing

Check diagnostic settings in the model configuration that apply to model referencing and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Port and parameter mismatch (ModelReferenceIOMismatchMessage)	none	error
Warning	Invalid root Import/Outport block connection (ModelReferenceIMsg)	none	error
Warning	Unsupported data logging (ModelReferenceDataLoggingMessage)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for Stateflow

Check diagnostic settings in the model configuration that apply to Stateflow and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Invalid input data access in chart initialization (SFInvalidInputDataAccessInChartInitDiag)	warning	error
Warning	Transition outside natural parent (SFTransitionOutsideNaturalParentDiag)	warning	error
Warning	Unreachable execution path (SFUnreachableExecutionPathDiag)	warning	error
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error
Warning	Transition action specified before condition action (SFTransitionActionBeforeConditionDiag)	warning	error
Warning	Absolute time temporal value shorter than sampling period (SFTemporalDelaySmallerThanSampleTimeDiag)	warning	error
Warning	Self-transition on leaf state (SFSelfTransitionDiag)	warning	error
Warning	'Execute-at-initialization' disabled in presence of input events (SFExecutionAtInitializationDiag)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related diagnostic settings for signal data](#)

Check diagnostic settings in the model configuration that apply to signal data and might impact safety.

 **Warning**

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Underspecified data types (UnderSpecifiedDataTypeMsg)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error
Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.

Check for model elements that do not link to requirements

Check for model elements that do not link to a requirements document.

Warning

The following model elements do not link to a requirements document:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF

- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2
- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

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Recommended Action

For each model element in the list, in the Model Editor, right-click the model element, select Requirements, and specify a requirement.

Check the Traceability Matrix for viewing requirements and their links to blocks in Simulink model in a compact format.



✓ Check for blocks not recommended for MISRA C:2012
Passed

⚠ Check configuration parameters for MISRA C:2012
Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcnS	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile
Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile
Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	

Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile
Warning	InstructionSetExtensions	SSE2	None	

Λ Less

Recommended Action

Modify the configuration parameters listed above to the recommended values.



⚠ Identify unconnected lines, input ports, and output ports

Identify unconnected lines, input ports, and output ports in the model

Warning

The following lines, input ports, or output ports are not properly connected in system:
SelfBalancingEV_V2

- SelfBalancingEV_V2/MODES/WRONG_INPUT/Switch5

Recommended Action

Connect the blocks specified in the list



⚠ Identify unresolved library links

The following blocks are unresolved library links. In each case, either the library cannot be found, or the library doesn't contain a block of the specified name.

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3

SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration

SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame

 Modeling Standards for DO-254  11  29  21  0  27  0

 *Display model version information*

Error occurred during model compile.

 High-Integrity Systems  0  18  14  0  18  0

 Simulink  0  13  3  0  4  0

 Check usage of Abs blocks

Error occurred during model compile.

 Check usage of conditionally executed subsystems

Error occurred during model compile.

 Check relational comparisons on floating-point signals

Error occurred during model compile.

-  Check usage of Relational Operator blocks

Error occurred during model compile.

-  Check usage of Logical Operator blocks

Error occurred during model compile.

-  Check usage of bitwise operations

Error occurred during model compile.

-  Check for inconsistent vector indexing methods

Identify inconsistent usage of vector indexing methods across the model or subsystem.

Passed

No blocks found using inconsistent indexing modes.

-  Check data types for blocks with index signals

Error occurred during model compile.

-  Check for root Imports with missing properties

Identify Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions. Import block properties are specified with block parameters or Simulink signal data objects that explicitly resolve to the connected signal lines.

Passed

There are no Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions

-  Check for root Imports with missing range definitions

Error occurred during model compile.

 Check for root Outports with missing range definitions

Error occurred during model compile.

 Check usage of Assignment blocks

Error occurred during model compile.

 Check global variables in graphical functions

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

 Check usage of Gain blocks

Identify Gain blocks with value which resolves to 1.

Warning

The following Gain blocks have value which resolves to 1.

- SelfBalancingEV_V2/ABS control System/Relative Slip
-
-
-
-

Recommended Action

Consider remodeling to remove the Gain blocks with values that resolve to 1

-  Check for length of user-defined object names

Error occurred during model compile.

-  Check data type of loop control variables

Error occurred during model compile.

-  Check for parameter tunability ignored for referenced models

Check for models parameter tunability information specified using Model Parameter Configuration dialog boxes.

Passed

No parameters found that lose the tunability defined in the referenced models.

-  Check usage of bit-shift operations

Error occurred during model compile.

-  Check safety-related diagnostic settings for variants

Check diagnostic settings in the model configuration that apply to variants and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Variant condition mismatch at signal source and destination (VariantConditionMismatch)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check for disabled and parameterized library links**

Identify disabled and parameterized library links in the model.

Warning

The following blocks are disabled library links:

-

Recommended Action

To resolve the link:

1. On the Simulink canvas, select an appropriate block.
2. Right-click the block and select **Resolve Link** from the **Library Link** menu.

 Stateflow  0  2  1  0  6  0

 **Check Stateflow charts for ordering of states and transitions**

Identify Stateflow charts that do not use explicit ordering of parallel states and transitions.

Passed

No Stateflow Charts found that deviate from recommended state/transition execution order settings.

 Check usage of recursions

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 Check Stateflow debugging options

Identify whether Stateflow debugging options are set appropriately.

Warning

The following Stateflow debugging options are not set appropriately:

Parameter	Current Value	Recommended Values
Wrap on overflow (IntegerOverflowMsg)	warning	error
Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Change the Stateflow debugging options to the recommended value.

-
- ✓ Check Stateflow charts for transition paths that cross parallel state boundaries
Identify transition paths that cross parallel state boundaries in Stateflow charts.

Passed

No transition paths crossing parallel state boundaries were found in Stateflow charts.

-
- ✓ Check for inappropriate use of transition paths
Identify transition paths that go into and out of a state without ending on a substate.

Passed

No transition paths found that go into and out of a state without ending on a substate.

-
- ✓ Check naming of ports in Stateflow charts
Identify mismatches between names of Stateflow ports and associated signals.

Passed

There are no name mismatches between Stateflow ports and associated signals

- Check scoping of Stateflow data objects

Identify Stateflow data objects with local scope that are not scoped at the chart level or below.

Passed

All Stateflow data objects are properly scoped.

- Check Stateflow charts for uniquely defined data objects

Identify local data identifiers that are defined in multiple scopes within a chart.

Passed

No Stateflow data identifiers found to be defined in multiple scopes.

- Check Stateflow charts for unary operators

Error occurred during model compile.



-
- Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

Passed

No MATLAB function blocks found without standardized function headers.

- Check MATLAB Code Analyzer messages

Check MATLAB functions for %#codegen directive, MATLAB Code Analyzer messages, and justification message IDs.

Passed

No MATLAB Function blocks found with Code Analyzer messages, missing %#codegen directive or inappropriate usage of justification message IDs.

- Check if/elseif/else patterns in MATLAB Function blocks

Identify if/elseif/else patterns without appropriate else conditions in embedded MATLAB code.

Passed

No inappropriate if/elseif/else patterns found.

Check switch statements in MATLAB Function blocks

Identify inappropriately used switch statements in embedded MATLAB code.

Passed

No inappropriately used switch statements found.

Check usage of relational operators in MATLAB Function blocks

Error occurred during model compile.

Check usage of logical operators and functions in MATLAB Function blocks

Error occurred during model compile.

Check MATLAB functions not supported for code generation

Identify MATLAB functions that are not supported for code generation.

Passed

All identified MATLAB functions are supported for code generation.

Configuration 0 0 9 0 2 0

Check safety-related diagnostic settings for saving

Check diagnostic settings in the model configuration that apply to saving model files.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block diagram contains disabled library links (SaveWithDisabledLinksMsg)	warning	error
Warning	Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related model referencing settings

Check model referencing settings in the model configuration that might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Rebuild (UpdateModelReferenceTargets)	IfOutOfDateOrStructuralChange	AssumeUpToDate, IfOutOfDateOrStructuralChange
Pass	Pass fixed-size scalar root inputs by value for code generation (ModelReferencePassRootInputsByReference) *	on	on

Pass	Minimize algebraic loop occurrences (ModelReferenceMinAlgLoopOccurrences)	off	off
------	--	-----	-----

Recommended Action

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

⚠ Check safety-related block reduction optimization settings

Check block reduction optimization settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block reduction (BlockReduction)	on	off

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for parameters**

Check diagnostic settings in the model configuration that apply to parameters and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect underflow (ParameterUnderflowMsg)	none	error
Warning	Detect precision loss (ParameterPrecisionLossMsg)	warning	error
Warning	Detect loss of tunability (ParameterTunabilityLossMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for model initialization**

Check diagnostic settings in the model configuration that affect model initialization and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Underspecified initialization detection (UnderspecifiedInitializationDetection)	Simplified	Simplified

 **Check safety-related diagnostic settings for signal connectivity**

Check diagnostic settings in the model configuration that apply to signal connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Signal label mismatch (SignalLabelMismatchMsg)	none	error
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error
Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error
Warning	Unconnected line (UnconnectedLineMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for bus connectivity

Check diagnostic settings in the model configuration that apply to bus connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unspecified bus object at root Outport block (RootOutportRequireBusObject)	warning	error
Warning	Element name mismatch (BusObjectLabelMismatch)	warning	error
Warning	Bus signal treated as vector (StrictBusMsg)	ErrorLevel1	ErrorOnBusTreatedAsVector
Warning	Non-bus signals treated as bus signals (NonBusSignalsTreatedAsBus)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for type conversions

Check diagnostic settings in the model configuration that apply to type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unnecessary type conversions (UnnecessaryDatatypeConvMsg)	none	warning
Warning	Vector/matrix block input conversion (VectorMatrixConversionMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for model referencing

Check diagnostic settings in the model configuration that apply to model referencing and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Port and parameter mismatch (ModelReferenceIOMismatchMessage)	none	error
Warning	Invalid root Import/Outport block connection (ModelReferenceIOMsg)	none	error
Warning	Unsupported data logging (ModelReferenceDataLoggingMessage)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for Stateflow**

Check diagnostic settings in the model configuration that apply to Stateflow and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Invalid input data access in chart initialization (SFInvalidInputDataAccessInChartInitDiag)	warning	error
Warning	Transition outside natural parent (SFTransitionOutsideNaturalParentDiag)	warning	error

Warning	Unreachable execution path (SFUnreachableExecutionPathDiag)	warning	error
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error
Warning	Transition action specified before condition action (SFTransitionActionBeforeConditionDiag)	warning	error
Warning	Absolute time temporal value shorter than sampling period (SFTemporalDelaySmallerThanSampleTimeDiag)	warning	error
Warning	Self-transition on leaf state (SFSelfTransitionDiag)	warning	error
Warning	'Execute-at-initialization' disabled in presence of input events (SFExecutionAtInitializationDiag)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for signal data**

Check diagnostic settings in the model configuration that apply to signal data and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values

Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Underspecified data types (UnderSpecifiedDataTypeMsg)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error
Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.



Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.



 Check for model elements that do not link to requirements

Check for model elements that do not link to a requirements document.

Warning

The following model elements do not link to a requirements document:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block

- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2
- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

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Recommended Action

For each model element in the list, in the Model Editor, right-click the model element, select Requirements, and specify a requirement.

Check the Traceability Matrix for viewing requirements and their links to blocks in Simulink model in a compact format.



⚠ Identify unresolved library links

The following blocks are unresolved library links. In each case, either the library cannot be found, or the library doesn't contain a block of the specified name.

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1

SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3

SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration

SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame

 HDL Coder  11  10  6  0  9  0

 Checks for blocks and block settings  1  1  1  0  6  0

 Check for HDL Reciprocal block usage

Passed : Check for HDL Reciprocal block usage

 Check for infinite and continuous sample time sources

Warn : Check for infinite and continuous sample time sources

Warning : Infinite sample time specified in

- SelfBalancingEV_V2/ABS control System/relative slip calculator/Constant
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Constant
- SelfBalancingEV_V2/Accelration Limit Tester/const
- SelfBalancingEV_V2/Constant
- SelfBalancingEV_V2/Constant1
- SelfBalancingEV_V2/Constant2
- SelfBalancingEV_V2/Constant3
- SelfBalancingEV_V2/Constant4
- SelfBalancingEV_V2/Input Acceleration
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Off_speed
- SelfBalancingEV_V2/MODES/ECO_MODE/Eco_mode
- SelfBalancingEV_V2/MODES/SPORTS_MODE/Sports_mode
- SelfBalancingEV_V2/MODES/Self_Balance/OFF
- SelfBalancingEV_V2/MODES/Self_Balance/ON
- SelfBalancingEV_V2/MODES/URBAN_MODE/Urban_mode
- SelfBalancingEV_V2/MODES/WRONG_INPUT/NULL
- SelfBalancingEV_V2/ON//OFF
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1/Ground
- SelfBalancingEV_V2/Subsystem/Constant
- SelfBalancingEV_V2/Subsystem/High Speed
- SelfBalancingEV_V2/Subsystem/Right Indicator
- SelfBalancingEV_V2/Switch_Mode(0-4)

- SelfBalancingEV_V2/System Switch/Constant
- SelfBalancingEV_V2/System Switch/Constant1

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 Check for unsupported blocks

Abnormal exit: Unable to resolve the name 'slhdlcoder.HDLCoder'.

 Check for MATLAB Function block settings

Passed : Check for MATLAB Function block settings

 Check for Stateflow chart settings

Passed : Check for Stateflow chart settings

 Check for Trigonometric Function block for LUT-based approximation method

Passed : Check for Trigonometric Function block for LUT-based approximation method

 Check for obsolete Unit Delay Enabled/Resettable blocks

Passed : Check for obsolete Unit Delay Enabled/Resettable blocks

 Check for unsupported storage class for signal objects

Passed : Check for unsupported storage class for signal objects

 Check for large matrix operations

Error occurred during model compile.

Industry standard checks 7 0 2 0 2 0

Check file extension

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

Check naming conventions

Passed : Check naming conventions

Check top-level subsystem/port names

Passed : Check top-level subsystem/port names

Check module/entity names

Warn : Check module/entity names

Warning : Following subsystems have names that are less than 2 characters or greater than 32 characters.

- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
-

Check package file names

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

Check signal and port names

Warn : Check signal and port names

Warning : Following ports and/or signals from the blocks have names that are less than 2 characters or greater than 40 characters.

- SelfBalancingEV_V2/MODES/Bike ON//OFF/u
 - SelfBalancingEV_V2/MODES/ECO_MODE/u
 - SelfBalancingEV_V2/MODES/SPORTS_MODE/u
 - SelfBalancingEV_V2/MODES/Self_Balance/u
 - SelfBalancingEV_V2/MODES/URBAN_MODE/u
 - SelfBalancingEV_V2/MODES/WRONG_INPUT/u
 - SelfBalancingEV_V2/Subsystem/u
-

 Check generics

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

 Check clock, reset, and enable signals

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

 Check architecture name

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

 Check entity and architecture

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

 Check clock settings

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

Check for model parameters suited for the HDL code generation

Warn : Check for model parameters suited for the HDL code generation

Warning : Following recommended model settings are not compliant

- The parameter SingleTaskRateTransMsg is set to none, but it should be set to error.
- The parameter Solver is set to VariableStepAuto, but it should be set to FixedStepDiscrete.
- The parameter AlgebraicLoopMsg is set to warning, but it should be set to error.
- The parameter ShowLineDimensions is set to off, but it should be set to on.
- The parameter ShowPortDataTypes is set to off, but it should be set to on.
- The parameter BlockReduction is set to on, but it should be set to off.
- The parameter ConditionallyExecuteInputs is set to on, but it should be set to off.
- The parameter DefaultParameterBehavior is set to Tunable, but it should be set to Inlined.
- The parameter ProdHWDeviceType is set to Intel->x86-64 (Windows64), but it should be set to ASIC/FPGA->ASIC/FPGA.
- The parameter DataTypeOverride is set to UseLocalSettings, but it should be set to Off.
- The parameter InheritOutputTypeSmallerThanSingle is set to off, but it should be set to on.

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Check for global reset setting for Xilinx and Altera devices

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

Check inline configurations setting

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

 Check for visualization settings

Warn : Check for visualization settings

Message : Following recommended model settings are not compliant

- Data type display on signals and ports is disabled.
 - Sample time display is disabled. There will not be any color codes representing sample times.
-

 Check delay balancing setting

Abnormal exit: Undefined function 'hdlget_param' for input arguments of type 'char'.

 Check algebraic loops

Error occurred during model compile.

 Native Floating Point checks  0  8  0  0  0  0

 Check for blocks that have nonzero output latency

Error occurred during model compile.

 Check blocks with nonzero ulp error

Error occurred during model compile.

 Check for single datatypes in the model

Error occurred during model compile.

 Check for double datatypes in the model with Native Floating Point

Error occurred during model compile.

 Check for Data Type Conversion blocks with incompatible settings

Error occurred during model compile.

 Check for HDL Reciprocal block usage

Error occurred during model compile.

 Check for Relational Operator block usage

Error occurred during model compile.

 Check for unsupported blocks with Native Floating Point

Error occurred during model compile.

 Checks for ports and subsystems  0  0  1  0  1  0

 Check for invalid top level subsystem

Passed : Check for invalid top level subsystem

 Check initial conditions of enabled and triggered subsystems

Warn : Check initial conditions of enabled and triggered subsystems

Warning : Following output ports of enabled/triggered subsystems should have initial value of zero

- SelfBalancingEV_V2/MODES/Speed_range
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF

Modeling Standards for IEC 61508 0 34 32 0 33 0

Display configuration management data

Error occurred during model compile.

Display model metrics and complexity report

Display number of elements and name, level, and depth of subsystems for the model or subsystem

Model metrics information

Display number of elements for Simulink blocks and Stateflow constructs

Summary

Element Type	Count
Import	25
Outport	29
SubSystem	58

Simulink

Block Type	Count
SubSystem	58
Outport	29

Reference	26
Import	25
Constant	23
PMIOPort	17
Switch	11
Display	11
Scope	9
Gain	8
Sum	6
Integrator	4
LampBlock	3
S-Function	3
SimscapeBlock	3
DataTypeConversion	2
RelationalOperator	2
Demux	2
FromWorkspace	2
Saturate	2
Stop	1
Lookup_n-D	1
Product	1
TransferFcn	1
Step	1
From	1
Goto	1
EnablePort	1
PMComponent	1

BusSelector	1
Ground	1
Terminator	1

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Model complexity information

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 5

Subsystem Depth

Subsystem Name	Level	Depth
SelfBalancingEV_V2/ABS control System	1	3
SelfBalancingEV_V2/ABS control System/relative slip calculator" title="SelfBalancingEV_V2/ABS control System/relative slip calculator"	2	1
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	2	2
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller"	3	1
SelfBalancingEV_V2/Accelration Limit Tester" title="SelfBalancingEV_V2/Accelration Limit Tester	1	1
SelfBalancingEV_V2/Correction Generator	1	2

SelfBalancingEV_V2/Correction Generator/PID Controller" title="SelfBalancingEV_V2/Correction Generator/PID Controller	2	1
SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1" title="SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1	2	1
SelfBalancingEV_V2/Input signal	1	1
SelfBalancingEV_V2/MODES	1	3
SelfBalancingEV_V2/MODES/Bike ON//OFF	2	2
SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero" title="SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero	3	1
SelfBalancingEV_V2/MODES/ECO_MODE	2	2
SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode" title="SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode	3	1
SelfBalancingEV_V2/MODES/SPORTS_MODE	2	2
SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode" title="SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode	3	1
SelfBalancingEV_V2/MODES/Self_Balance	2	2
SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance" title="SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance	3	1
SelfBalancingEV_V2/MODES/URBAN_MODE	2	2
SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode" title="SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode	3	1
SelfBalancingEV_V2/MODES/WRONC_INPUT	2	2
SelfBalancingEV_V2/MODES/WRONC_INPUT/Compare To Constant Wrong_input" title="SelfBalancingEV_V2/MODES/WRONC_INPUT/Compare To Constant Wrong_input	3	1
SelfBalancingEV_V2/Signal Builder1	1	1

SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system	1	4
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery	2	3
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source	3	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1	4	1

SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1	2	1
SelfBalancingEV_V2/Subsystem	1	2
SelfBalancingEV_V2/Subsystem/Compare To Constant2" title="SelfBalancingEV_V2/Subsystem/Compare To Constant2	2	1
SelfBalancingEV_V2/Subsystem/Compare To Constant4" title="SelfBalancingEV_V2/Subsystem/Compare To Constant4	2	1
SelfBalancingEV_V2/System Switch	1	1
SelfBalancingEV_V2/THERMAL MANAGEMENT	1	2
SelfBalancingEV_V2/THERMAL MANAGEMENT/PID CONTROLLER" title="SelfBalancingEV_V2/THERMAL MANAGEMENT/PID CONTROLLER"	2	1
SelfBalancingEV_V2/THERMAL MANAGEMENT/PS-SIMULINK CONVERTER1" title="SelfBalancingEV_V2/THERMAL MANAGEMENT/PS-SIMULINK CONVERTER1	2	1
SelfBalancingEV_V2/THERMAL MANAGEMENT/SIMULINK-PS CONVERTER" title="SelfBalancingEV_V2/THERMAL MANAGEMENT/SIMULINK-PS CONVERTER	2	1
SelfBalancingEV_V2/THERMAL MANAGEMENT/SOLVER CONFIGURATION1" title="SelfBalancingEV_V2/THERMAL MANAGEMENT/SOLVER CONFIGURATION1	2	1
SelfBalancingEV_V2/TWO WHEELED BIKE	1	4
SelfBalancingEV_V2/TWO WHEELED BIKE/MOMENTUM CALCULATION BLOCK" title="SelfBalancingEV_V2/TWO WHEELED BIKE/MOMENTUM CALCULATION BLOCK	2	2
SelfBalancingEV_V2/TWO WHEELED BIKE/MOMENTUM CALCULATION BLOCK/PS-SIMULINK CONVERTER1" title="SelfBalancingEV_V2/TWO WHEELED BIKE/MOMENTUM CALCULATION BLOCK/PS-SIMULINK CONVERTER1	3	1
SelfBalancingEV_V2/TWO WHEELED BIKE/PHYSICAL BLOCK" title="SelfBalancingEV_V2/TWO WHEELED BIKE/PHYSICAL BLOCK	2	3

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars	4	1
SelfBalancingEV_V2/Two Wheeled Bike/World Frame" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame	2	2
SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration	3	1

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⚠ Check for unconnected objects

Identify unconnected lines, input ports, and output ports in the model

Warning

The following lines, input ports, or output ports are not properly connected in system:

SelfBalancingEV_V2

- SelfBalancingEV_V2/MODES/WRONG_INPUT/Switch5

Recommended Action

Connect the blocks specified in the list

High-Integrity Systems 0 33 31 0 32 0

Simulink 0 24 4 0 8 0

Check usage of Abs blocks

Error occurred during model compile.

Check usage of remainder and reciprocal operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of square root operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of log and log10 operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of While Iterator blocks

Identify While Iterator blocks that do not have a positive value for the maximum number of iterations.

Passed

No While Iterator blocks found that might cause infinite loops

- ✓ Check usage of For and While Iterator subsystems

Identify sample time-dependent blocks in While and For Iterator subsystems.

Passed

No sample time-dependent blocks in For or While Iterator subsystems.

- ✗ Check usage of For Iterator blocks

Error occurred during model compile.

- ✗ Check usage of If blocks and If Action Subsystem blocks

Error occurred during model compile.

- ✗ Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Error occurred during model compile.

- ✗ Check usage of conditionally executed subsystems

Error occurred during model compile.

- ✗ Check usage of Merge blocks

Error occurred during model compile.

- ✗ Check relational comparisons on floating-point signals

Error occurred during model compile.

 Check usage of Relational Operator blocks

Error occurred during model compile.

 Check usage of Logical Operator blocks

Error occurred during model compile.

 Check usage of bitwise operations

Error occurred during model compile.

 Check for blocks not recommended for C/C++ production code deployment

Identify blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/Stop Simulation
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Signal Builder1

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/ABS control System/stopping distance
-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Thermal Management/PID Controller

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

1. Consider using the Model Discretizer to map these continuous blocks into discrete equivalents that support code generation. From a model, select Model Discretizer to access the Model Discretizer.
2. Not recommended for production code.



Identify inconsistent usage of vector indexing methods across the model or subsystem.

Passed

No blocks found using inconsistent indexing modes.

-  Check data types for blocks with index signals

Error occurred during model compile.

-  Check usage of variant blocks

Check variant block settings that might result in code that doesn't trace back to requirements.

Passed

No variant blocks have "VariantActivationTime" set to 'code compile'.

-  Check usage of lookup table blocks

Check for Lookup Table blocks, Prelookup blocks and Interpolation blocks that do not generate out-of-range checking code.

Passed

No lookup table blocks found to not generate out-of-range checking code.

-  Check usage of Signal Routing blocks

Error occurred during model compile.

-  Check for root Imports with missing properties

Identify Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions. Import block properties are specified with block parameters or Simulink signal data objects that explicitly resolve to the connected signal lines.

Passed

There are no Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions

-  Check for root Imports with missing range definitions

Error occurred during model compile.

-  Check for root Outports with missing range definitions

Error occurred during model compile.

-  Check usage of Reciprocal Sqrt blocks

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

-  Check usage of Assignment blocks

Error occurred during model compile.

-  Check global variables in graphical functions

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

-  Check usage of Gain blocks

Identify Gain blocks with value which resolves to 1.

Warning

The following Gain blocks have value which resolves to 1.

- SelfBalancingEV_V2/ABS control System/Relative Slip
-
-
-

-

Recommended Action

Consider remodeling to remove the Gain blocks with values that resolve to 1

 Check for length of user-defined object names

Error occurred during model compile.

 Check data type of loop control variables

Error occurred during model compile.

 Check for divide-by-zero calculations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check for parameter tunability ignored for referenced models

Check for models parameter tunability information specified using Model Parameter Configuration dialog boxes.

Passed

No parameters found that lose the tunability defined in the referenced models.

 Check usage of bit-shift operations

Error occurred during model compile.

 Check safety-related diagnostic settings for variants

Check diagnostic settings in the model configuration that apply to variants and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Variant condition mismatch at signal source and destination (VariantConditionMismatch)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check for disabled and parameterized library links

Identify disabled and parameterized library links in the model.

Warning

The following blocks are disabled library links:

-

Recommended Action

To resolve the link:

1. On the Simulink canvas, select an appropriate block.

2. Right-click the block and select **Resolve Link** from the **Library Link** menu.

Check for unreachable and dead code

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.



 Check state machine type of Stateflow charts

Identify Stateflow Charts whose State Machine Type differs from the type set in the Model Advisor Configuration Editor.

Passed

No Stateflow Charts found that deviate from recommended state machine type.

✓ Check Stateflow charts for ordering of states and transitions

Identify Stateflow charts that do not use explicit ordering of parallel states and transitions.

Passed

No Stateflow Charts found that deviate from recommended state/transition execution order settings.

Check usage of recursions

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled

Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 **Check Stateflow debugging options**

Identify whether Stateflow debugging options are set appropriately.

Warning

The following Stateflow debugging options are not set appropriately:

Parameter	Current Value	Recommended Values
Wrap on overflow (IntegerOverflowMsg)	warning	error

Simulation range checking (SignalRangeChecking)	none	error
---	------	-------

Recommended Action

Change the Stateflow debugging options to the recommended value.

- ✓ Check Stateflow charts for transition paths that cross parallel state boundaries

Identify transition paths that cross parallel state boundaries in Stateflow charts.

Passed

No transition paths crossing parallel state boundaries were found in Stateflow charts.

- ✓ Check for inappropriate use of transition paths

Identify transition paths that go into and out of a state without ending on a substate.

Passed

No transition paths found that go into and out of a state without ending on a substate.

- ✗ Check Stateflow charts for strong data typing

Error occurred during model compile.

- ✓ Check naming of ports in Stateflow charts

Identify mismatches between names of Stateflow ports and associated signals.

Passed

There are no name mismatches between Stateflow ports and associated signals

- ✓ Check scoping of Stateflow data objects

Identify Stateflow data objects with local scope that are not scoped at the chart level or below.

Passed

All Stateflow data objects are properly scoped.

-
- ✓ Check Stateflow charts for uniquely defined data objects

Identify local data identifiers that are defined in multiple scopes within a chart.

Passed

No Stateflow data identifiers found to be defined in multiple scopes.

- ✗ Check assignment operations in Stateflow charts

Error occurred during model compile.

- ✗ Check Stateflow charts for unary operators

Error occurred during model compile.



-
- ✓ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

Passed

No MATLAB function blocks found without standardized function headers.

- ✓ Check for MATLAB Function interfaces with inherited properties

Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity or data type properties.

Passed

No MATLAB Function interfaces with inherited complexity or data type properties found.

- ✓ Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

Passed

No MATLAB Function blocks found that violate code and complexity metrics.

 Check MATLAB Code Analyzer messages

Check MATLAB functions for %#codegen directive, MATLAB Code Analyzer messages, and justification message IDs.

Passed

No MATLAB Function blocks found with Code Analyzer messages, missing %#codegen directive or inappropriate usage of justification message IDs.

 Check if/elseif/else patterns in MATLAB Function blocks

Identify if/elseif/else patterns without appropriate else conditions in embedded MATLAB code.

Passed

No inappropriate if/elseif/else patterns found.

 Check switch statements in MATLAB Function blocks

Identify inappropriately used switch statements in embedded MATLAB code.

Passed

No inappropriately used switch statements found.

 Check usage of relational operators in MATLAB Function blocks

Error occurred during model compile.

 Check usage of logical operators and functions in MATLAB Function blocks

Error occurred during model compile.

 Check type and size of condition expressions

Error occurred during model compile.



Check MATLAB functions not supported for code generation

Identify MATLAB functions that are not supported for code generation.

Passed

All identified MATLAB functions are supported for code generation.



Metrics for generated code complexity

Error occurred during model compile.

Configuration 0 0 24 0 8 0



Check safety-related diagnostic settings for data store memory

Check diagnostic settings in the model configuration that apply to data store memory and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect read before write (ReadBeforeWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after read (WriteAfterReadMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after write (WriteAfterWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Duplicate data store names (UniqueDataStoreMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for saving**

Check diagnostic settings in the model configuration that apply to saving model files.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block diagram contains disabled library links (SaveWithDisabledLinksMsg)	warning	error
Warning	Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related model referencing settings**

Check model referencing settings in the model configuration that might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Rebuild (UpdateModelReferenceTargets)	IfOutOfDateOrStructuralChange	AssumeUpToDate, IfOutOfDateOrStructuralChange
Pass	Pass fixed-size scalar root inputs by value for code generation (ModelReferencePassRootInputsByReference) *	on	on
Pass	Minimize algebraic loop occurrences (ModelReferenceMinAlgLoopOccurrences)	off	off

Recommended Action

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

⚠ Check safety-related code generation settings for comments

Check code generation settings in the model configuration that apply comments and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ShowEliminatedStatement	off	on	GenerateComments
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ForceParamTrailComments	off	on	GenerateComments
Warning	ReqInCode	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, GenerateComments

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related code generation interface settings

Check code generation interface settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	SupportNonFinite	on	off	
Warning	SupportAbsoluteTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	IncludeMdlTerminateFcn	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SuppressErrorStatus	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
Warning	MatFileLogging	on	off	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related solver settings for simulation time](#)

Identify if the model Start time is set to 0 and Stop time is less than the Application Life Span.

Passed

No issues found with solver settings for simulation time.

 [Check safety-related solver settings for solver options](#)

Check solver settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Type (SolverType)	Variable-step	Fixed-step
Warning	Solver (SolverName)	VariableStepAuto	FixedStepDiscrete

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ Check safety-related solver settings for tasking and sample-time

Check solver settings in the model configuration that apply to tasking and sample-time constraints and might impact safety.

Passed

All constraints on model configuration parameters have been met.

-
- ⚠ Check safety-related diagnostic settings for solvers

Check diagnostic settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Algebraic loop (AlgebraicLoopMsg)	warning	error
Warning	Minimize algebraic loop (ArtificialAlgebraicLoopMsg)	warning	error
Warning	Block priority violation (BlockPriorityViolationMsg)	warning	error
Warning	Automatic solver parameter selection (SolverPrmCheckMsg)	none	error
Warning	State name clash (StateNameClashWarn)	none	warning

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for sample time

Check diagnostic settings in the model configuration that apply to sample time and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values

Warning	Source block specifies -1 sample time (InheritedTsInSrcMsg)	warning	error
Warning	Enforce sample times specified by Signal Specification blocks (SigSpecEnsureSampleTimeMsg)	warning	error
Warning	Single task data transfer (SingleTaskRateTransMsg)	none	error
Warning	Tasks with equal priority (TasksWithSamePriorityMsg)	warning	error
Warning	Unspecified inheritability of sample time (UnknownTslnhSupMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ Check safety-related optimization settings for logic signals

Check optimization settings in the model configuration that apply to logic signals and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Implement logic signals as Boolean data (vs. double) (BooleanDataType)	on	on

 **Check safety-related block reduction optimization settings**

Check block reduction optimization settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block reduction (BlockReduction)	on	off

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related code generation settings for code style**

Check code generation settings in the model configuration that apply to code style and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites

Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Maximum, Standards	SystemTargetFile
Warning	PreserveExpressionOrder	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related optimization settings for application lifespan

Check optimization settings in the model configuration that apply to application lifespan and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Application lifespan (days) (LifeSpan)	auto	inf

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related code generation identifier settings**

Check code generation identifier settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Not Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target		
Warning	MangleLength	<i>Prerequisite constraint not met.</i>		1, 2, 3	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related optimization settings for data initialization**

Check optimization settings in the model configuration that apply to data initialization and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ZeroExternalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging
Warning	ZerointernalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

 **Check safety-related optimization settings for data type conversions**

Check optimization settings in the model configuration that apply to data type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	EfficientFloat2IntCast	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for division arithmetic exceptions

Check optimization settings in the model configuration that apply to division arithmetic exceptions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	NoFixptDivByZeroProtection	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for specified minimum and maximum values

Check optimization settings in the model configuration that apply to specified minimum and maximum values and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	UseSpecifiedMinMax	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

✓ Check safety-related settings for hardware implementation

Check 'Byte ordering' and 'Signed integer division rounds to' parameters

Identify inconsistencies or underspecification of hardware attributes that can lead to incorrect and inefficient generated code.

Passed

Target specification is consistent.

Check whether 'Production hardware' and 'Test hardware' match

Search for 'Test hardware is the same as production hardware' in the Configuration Parameters dialog box and check if it is selected. If it is cleared, identify whether target specifications match.

Passed

'Test hardware is the same as production hardware' is selected or is cleared and the target specifications match.

Check safety-related diagnostic settings for compatibility

Check diagnostic settings in the model configuration that affect compatibility and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	S-function upgrades needed (SFcnCompatibilityMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for parameters

Check diagnostic settings in the model configuration that apply to parameters and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect underflow (ParameterUnderflowMsg)	none	error
Warning	Detect precision loss (ParameterPrecisionLossMsg)	warning	error
Warning	Detect loss of tunability (ParameterTunabilityLossMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for Merge blocks

Check diagnostic settings in the model configuration that apply to Merge blocks and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values

Pass	Detect multiple driving blocks executing at the same time step (MergeDetectMultiDrivingBlocksExec)	error	error
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✓ Check safety-related diagnostic settings for model initialization

Check diagnostic settings in the model configuration that affect model initialization and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Underspecified initialization detection (UnderspecifiedInitializationDetection)	Simplified	Simplified

⚠ Check safety-related diagnostic settings for data used for debugging

Check diagnostic settings in the model configuration that apply to data used for debugging and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for signal connectivity**

Check diagnostic settings in the model configuration that apply to signal connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Signal label mismatch (SignalLabelMismatchMsg)	none	error
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error
Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error
Warning	Unconnected line (UnconnectedLineMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for bus connectivity**

Check diagnostic settings in the model configuration that apply to bus connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unspecified bus object at root Outport block (RootOutportRequireBusObject)	warning	error
Warning	Element name mismatch (BusObjectLabelMismatch)	warning	error
Warning	Bus signal treated as vector (StrictBusMsg)	ErrorLevel1	ErrorOnBusTreatedAsVector
Warning	Non-bus signals treated as bus signals (NonBusSignalsTreatedAsBus)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-  Check safety-related diagnostic settings that apply to function-call connectivity

Check diagnostic settings in the model configuration that apply to function-call connectivity and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	InvalidFcnCallConnMsg	error	error
Pass	Context-dependent inputs (FcnCallInpInsideContextMsg)	error	error

-
-  Check safety-related diagnostic settings for type conversions

Check diagnostic settings in the model configuration that apply to type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unnecessary type conversions (UnnecessaryDatatypeConvMsg)	none	warning

Warning	Vector/matrix block input conversion (VectorMatrixConversionMsg)	none	error
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Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for model referencing

Check diagnostic settings in the model configuration that apply to model referencing and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Port and parameter mismatch (ModelReferenceIOMismatchMessage)	none	error
Warning	Invalid root Import/Outport block connection (ModelReferenceIMsg)	none	error
Warning	Unsupported data logging (ModelReferenceDataLoggingMessage)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for Stateflow

Check diagnostic settings in the model configuration that apply to Stateflow and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Invalid input data access in chart initialization (SFInvalidInputDataAccessInChartInitDiag)	warning	error
Warning	Transition outside natural parent (SFTransitionOutsideNaturalParentDiag)	warning	error
Warning	Unreachable execution path (SFUnreachableExecutionPathDiag)	warning	error
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error
Warning	Transition action specified before condition action (SFTransitionActionBeforeConditionDiag)	warning	error
Warning	Absolute time temporal value shorter than sampling period (SFTemporalDelaySmallerThanSampleTimeDiag)	warning	error
Warning	Self-transition on leaf state (SFSelfTransitionDiag)	warning	error
Warning	'Execute-at-initialization' disabled in presence of input events (SFExecutionAtInitializationDiag)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related diagnostic settings for signal data](#)

Check diagnostic settings in the model configuration that apply to signal data and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Underspecified data types (UnderSpecifiedDataTypeMsg)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error
Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.

Check for model elements that do not link to requirements

Check for model elements that do not link to a requirements document.

Warning

The following model elements do not link to a requirements document:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF

- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2
- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

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Recommended Action

For each model element in the list, in the Model Editor, right-click the model element, select Requirements, and specify a requirement.

Check the Traceability Matrix for viewing requirements and their links to blocks in Simulink model in a compact format.



Check for blocks not recommended for MISRA C:2012
Passed

Check configuration parameters for MISRA C:2012
Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcnS	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile
Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile
Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	

Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile
Warning	InstructionSetExtensions	SSE2	None	

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Recommended Action

Modify the configuration parameters listed above to the recommended values.

 Modeling Standards for IEC 62304  0  34  32  0  33  0

 [Display configuration management data](#)
Error occurred during model compile.

 [Display model metrics and complexity report](#)
Display number of elements and name, level, and depth of subsystems for the model or subsystem

Model metrics information

Display number of elements for Simulink blocks and Stateflow constructs

Summary

Element Type	Count
Import	25
Outport	29
SubSystem	58

Simulink

Block Type	Count
SubSystem	58
Outport	29
Reference	26
Import	25
Constant	23
PMIOPort	17
Switch	11
Display	11
Scope	9
Gain	8
Sum	6

Integrator	4
LampBlock	3
S-Function	3
SimscapeBlock	3
DataTypeConversion	2
RelationalOperator	2
Demux	2
FromWorkspace	2
Saturate	2
Stop	1
Lookup_n-D	1
Product	1
TransferFcn	1
Step	1
From	1
Goto	1
EnablePort	1
PMComponent	1
BusSelector	1
Ground	1
Terminator	1

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Model complexity information

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 5

Subsystem Depth

Subsystem Name	Level	Depth
SelfBalancingEV_V2/ABS control System	1	3
SelfBalancingEV_V2/ABS control System/relative slip calculator" title="SelfBalancingEV_V2/ABS control System/relative slip calculator"	2	1
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	2	2
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller"	3	1
SelfBalancingEV_V2/Accelration Limit Tester" title="SelfBalancingEV_V2/Accelration Limit Tester	1	1
SelfBalancingEV_V2/Correction Generator	1	2
SelfBalancingEV_V2/Correction Generator/PID Controller" title="SelfBalancingEV_V2/Correction Generator/PID Controller"	2	1
SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1" title="SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1"	2	1
SelfBalancingEV_V2/Input signal	1	1
SelfBalancingEV_V2/MODES	1	3
SelfBalancingEV_V2/MODES/Bike ON//OFF	2	2
SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero" title="SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero"	3	1
SelfBalancingEV_V2/MODES/ECO_MODE	2	2
SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode" title="SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode	3	1

SelfBalancingEV_V2/MODES/SPORTS_MODE	2	2
SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode" title="SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode"	3	1
SelfBalancingEV_V2/MODES/Self_Balance	2	2
SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance" title="SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance"	3	1
SelfBalancingEV_V2/MODES/URBAN_MODE	2	2
SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode" title="SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode"	3	1
SelfBalancingEV_V2/MODES/WRONC_INPUT	2	2
SelfBalancingEV_V2/MODES/WRONC_INPUT/Compare To Constant Wrong_input" title="SelfBalancingEV_V2/MODES/WRONC_INPUT/Compare To Constant Wrong_input"	3	1
SelfBalancingEV_V2/Signal Builder1	1	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system"	1	4
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1"	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery"	2	3
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source"	3	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement"	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model" title="SelfBalancingEV_V2/State of charge,	4	1

current and voltage monitoring system/Vehicle battery/Current Measurement/Model		
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model"	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1	2	1
SelfBalancingEV_V2/Subsystem	1	2
SelfBalancingEV_V2/Subsystem/Compare To Constant2" title="SelfBalancingEV_V2/Subsystem/Compare To Constant2	2	1
SelfBalancingEV_V2/Subsystem/Compare To Constant4" title="SelfBalancingEV_V2/Subsystem/Compare To Constant4	2	1

SelfBalancingEV_V2/System Switch	1	1
SelfBalancingEV_V2/Thermal Management	1	2
SelfBalancingEV_V2/Thermal Management/PID Controller" title="SelfBalancingEV_V2/Thermal Management/PID Controller"	2	1
SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1" title="SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1	2	1
SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter" title="SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter	2	1
SelfBalancingEV_V2/Thermal Management/Solver Configuration1" title="SelfBalancingEV_V2/Thermal Management/Solver Configuration1	2	1
SelfBalancingEV_V2/Two Wheeled Bike	1	4
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block	2	2
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1	3	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block	2	3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars	4	1
SelfBalancingEV_V2/Two Wheeled Bike/World Frame" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame	2	2

SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration"	3	1
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[^ Less](#)

Check for unconnected objects

Identify unconnected lines, input ports, and output ports in the model

Warning

The following lines, input ports, or output ports are not properly connected in system:
SelfBalancingEV_V2

- SelfBalancingEV_V2/MODES/WRONG_INPUT/Switch5

Recommended Action

Connect the blocks specified in the list

 [High-Integrity Systems](#)  0  33  31  0  32  0

 [Simulink](#)  0  24  4  0  8  0

 [Check usage of Abs blocks](#)

Error occurred during model compile.

 [Check usage of remainder and reciprocal operations](#)

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of square root operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of log and log10 operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of While Iterator blocks

Identify While Iterator blocks that do not have a positive value for the maximum number of iterations.

Passed

No While Iterator blocks found that might cause infinite loops

 Check usage of For and While Iterator subsystems

Identify sample time-dependent blocks in While and For Iterator subsystems.

Passed

No sample time-dependent blocks in For or While Iterator subsystems.

 Check usage of For Iterator blocks

Error occurred during model compile.

 Check usage of If blocks and If Action Subsystem blocks

Error occurred during model compile.

 Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Error occurred during model compile.

 Check usage of conditionally executed subsystems

Error occurred during model compile.

 Check usage of Merge blocks

Error occurred during model compile.

 Check relational comparisons on floating-point signals

Error occurred during model compile.

 Check usage of Relational Operator blocks

Error occurred during model compile.

 Check usage of Logical Operator blocks

Error occurred during model compile.

 Check usage of bitwise operations

Error occurred during model compile.

⚠ Check for blocks not recommended for C/C++ production code deployment

Identify blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/Stop Simulation
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Signal Builder1

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

Identify
blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/ABS control System/stopping distance
-
-

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Thermal Management/PID Controller

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

1. Consider using the Model Discretizer to map these continuous blocks into discrete equivalents that support code generation. From a model, select **Model Discretizer** to access the Model Discretizer.
2. Not recommended for production code.

 [Check for inconsistent vector indexing methods](#)

Identify inconsistent usage of vector indexing methods across the model or subsystem.

Passed

No blocks found using inconsistent indexing modes.

 [Check data types for blocks with index signals](#)

Error occurred during model compile.

 [Check usage of variant blocks](#)

Check variant block settings that might result in code that doesn't trace back to requirements.

Passed

No variant blocks have "VariantActivationTime" set to 'code compile'.

 [Check usage of lookup table blocks](#)

Check for Lookup Table blocks, Prelookup blocks and Interpolation blocks that do not generate out-of-range checking code.

Passed

No lookup table blocks found to not generate out-of-range checking code.

- ☒ Check usage of Signal Routing blocks

Error occurred during model compile.

- ✓ Check for root Imports with missing properties

Identify Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions. Import block properties are specified with block parameters or Simulink signal data objects that explicitly resolve to the connected signal lines.

Passed

There are no Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions

- ☒ Check for root Imports with missing range definitions

Error occurred during model compile.

- ☒ Check for root Outports with missing range definitions

Error occurred during model compile.

- ☒ Check usage of Reciprocal Sqrt blocks

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

- ☒ Check usage of Assignment blocks

Error occurred during model compile.

 Check global variables in graphical functions

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

 Check usage of Gain blocks

Identify Gain blocks with value which resolves to 1.

Warning

The following Gain blocks have value which resolves to 1.

- SelfBalancingEV_V2/ABS control System/Relative Slip
-
-
-
-

Recommended Action

Consider remodeling to remove the Gain blocks with values that resolve to 1

 Check for length of user-defined object names

Error occurred during model compile.

 Check data type of loop control variables

Error occurred during model compile.

 Check for divide-by-zero calculations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check for parameter tunability ignored for referenced models

Check for models parameter tunability information specified using Model Parameter Configuration dialog boxes.

Passed

No parameters found that lose the tunability defined in the referenced models.

 Check usage of bit-shift operations

Error occurred during model compile.

 Check safety-related diagnostic settings for variants

Check diagnostic settings in the model configuration that apply to variants and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Variant condition mismatch at signal source and destination (VariantConditionMismatch)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check for disabled and parameterized library links**

Identify disabled and parameterized library links in the model.

Warning

The following blocks are disabled library links:

-

Recommended Action

To resolve the link:

1. On the Simulink canvas, select an appropriate block.
 2. Right-click the block and select **Resolve Link** from the **Library Link** menu.
-

 **Check for unreachable and dead code**

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

- Check state machine type of Stateflow charts

Identify Stateflow Charts whose State Machine Type differs from the type set in the Model Advisor Configuration Editor.

Passed

No Stateflow Charts found that deviate from recommended state machine type.

- Check Stateflow charts for ordering of states and transitions

Identify Stateflow charts that do not use explicit ordering of parallel states and transitions.

Passed

No Stateflow Charts found that deviate from recommended state/transition execution order settings.

- Check usage of recursions

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical

Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 **Check Stateflow debugging options**

Identify whether Stateflow debugging options are set appropriately.

Warning

The following Stateflow debugging options are not set appropriately:

Parameter	Current Value	Recommended Values
Wrap on overflow (IntegerOverflowMsg)	warning	error
Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Change the Stateflow debugging options to the recommended value.

 **Check Stateflow charts for transition paths that cross parallel state boundaries**

Identify transition paths that cross parallel state boundaries in Stateflow charts.

Passed

No transition paths crossing parallel state boundaries were found in Stateflow charts.

-
- ✓ Check for inappropriate use of transition paths

Identify transition paths that go into and out of a state without ending on a substate.

Passed

No transition paths found that go into and out of a state without ending on a substate.

- ✗ Check Stateflow charts for strong data typing

Error occurred during model compile.

- ✓ Check naming of ports in Stateflow charts

Identify mismatches between names of Stateflow ports and associated signals.

Passed

There are no name mismatches between Stateflow ports and associated signals

- ✓ Check scoping of Stateflow data objects

Identify Stateflow data objects with local scope that are not scoped at the chart level or below.

Passed

All Stateflow data objects are properly scoped.

- ✓ Check Stateflow charts for uniquely defined data objects

Identify local data identifiers that are defined in multiple scopes within a chart.

Passed

No Stateflow data identifiers found to be defined in multiple scopes.

- ✗ Check assignment operations in Stateflow charts

Error occurred during model compile.

- ✗ Check Stateflow charts for unary operators

Error occurred during model compile.

MATLAB 0 4 0 7 0

Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

Passed

No MATLAB function blocks found without standardized function headers.

Check for MATLAB Function interfaces with inherited properties

Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity or data type properties.

Passed

No MATLAB Function interfaces with inherited complexity or data type properties found.

Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

Passed

No MATLAB Function blocks found that violate code and complexity metrics.

Check MATLAB Code Analyzer messages

Check MATLAB functions for %#codegen directive, MATLAB Code Analyzer messages, and justification message IDs.

Passed

No MATLAB Function blocks found with Code Analyzer messages, missing %#codegen directive or inappropriate usage of justification message IDs.

Check if/elseif/else patterns in MATLAB Function blocks

Identify if/elseif/else patterns without appropriate else conditions in embedded MATLAB code.

Passed

No inappropriate if/elseif/else patterns found.

- Check switch statements in MATLAB Function blocks
Identify inappropriately used switch statements in embedded MATLAB code.

Passed

No inappropriately used switch statements found.

- Check usage of relational operators in MATLAB Function blocks

Error occurred during model compile.

- Check usage of logical operators and functions in MATLAB Function blocks

Error occurred during model compile.

- Check type and size of condition expressions

Error occurred during model compile.

- Check MATLAB functions not supported for code generation
Identify MATLAB functions that are not supported for code generation.

Passed

All identified MATLAB functions are supported for code generation.

- Metrics for generated code complexity

Error occurred during model compile.

Configuration 0 0 24 0 8 0

- Check safety-related diagnostic settings for data store memory
Check diagnostic settings in the model configuration that apply to data store memory and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect read before write (ReadBeforeWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after read (WriteAfterReadMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after write (WriteAfterWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Duplicate data store names (UniqueDataStoreMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
-  Check safety-related diagnostic settings for saving
Check diagnostic settings in the model configuration that apply to saving model files.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block diagram contains disabled library links (SaveWithDisabledLinksMsg)	warning	error
Warning	Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related model referencing settings

Check model referencing settings in the model configuration that might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Rebuild (UpdateModelReferenceTargets)	IfOutOfDateOrStructuralChange	AssumeUpToDate, IfOutOfDateOrStructuralChange
Pass	Pass fixed-size scalar root inputs by value for code generation (ModelReferencePassRootInputsByReference) *	on	on

Pass	Minimize algebraic loop occurrences (ModelReferenceMinAlgLoopOccurrences)	off	off
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Recommended Action

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

⚠ Check safety-related code generation settings for comments

Check code generation settings in the model configuration that apply comments and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ShowEliminatedStatement	off	on	GenerateComments
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ForceParamTrailComments	off	on	GenerateComments

Warning	ReqInCode	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, GenerateComments
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Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related code generation interface settings](#)

Check code generation interface settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	SupportNonFinite	on	off	
Warning	SupportAbsoluteTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	IncludeMdlTerminateFcn	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Warning	SuppressErrorStatus	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
Warning	MatFileLogging	on	off	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related solver settings for simulation time**

Identify if the model Start time is set to 0 and Stop time is less than the Application Life Span.

Passed

No issues found with solver settings for simulation time.

 **Check safety-related solver settings for solver options**

Check solver settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Type (SolverType)	Variable-step	Fixed-step
Warning	Solver (SolverName)	VariableStepAuto	FixedStepDiscrete

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

✓ [Check safety-related solver settings for tasking and sample-time](#)

Check solver settings in the model configuration that apply to tasking and sample-time constraints and might impact safety.

Passed

All constraints on model configuration parameters have been met.

⚠ [Check safety-related diagnostic settings for solvers](#)

Check diagnostic settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Algebraic loop (AlgebraicLoopMsg)	warning	error
Warning	Minimize algebraic loop (ArtificialAlgebraicLoopMsg)	warning	error
Warning	Block priority violation (BlockPriorityViolationMsg)	warning	error
Warning	Automatic solver parameter selection (SolverPrmCheckMsg)	none	error
Warning	State name clash (StateNameClashWarn)	none	warning

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for sample time

Check diagnostic settings in the model configuration that apply to sample time and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Source block specifies -1 sample time (InheritedTsInSrcMsg)	warning	error
Warning	Enforce sample times specified by Signal Specification blocks (SigSpecEnsureSampleTimeMsg)	warning	error
Warning	Single task data transfer (SingleTaskRateTransMsg)	none	error
Warning	Tasks with equal priority (TasksWithSamePriorityMsg)	warning	error
Warning	Unspecified inheritability of sample time (UnknownTsInhSupMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related optimization settings for logic signals**

Check optimization settings in the model configuration that apply to logic signals and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Implement logic signals as Boolean data (vs. double) (BooleanDataType)	on	on

 **Check safety-related block reduction optimization settings**

Check block reduction optimization settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block reduction (BlockReduction)	on	off

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related code generation settings for code style](#)

Check code generation settings in the model configuration that apply to code style and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Maximum, Standards	SystemTargetFile
Warning	PreserveExpressionOrder	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related optimization settings for application lifespan](#)

Check optimization settings in the model configuration that apply to application lifespan and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Application lifespan (days) (LifeSpan)	auto	inf

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related code generation identifier settings

Check code generation identifier settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Not Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target		

Warning	MangleLength	<i>Prerequisite constraint not met.</i>		1, 2, 3	SystemTargetFile
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Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related optimization settings for data initialization

Check optimization settings in the model configuration that apply to data initialization and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ZeroExternalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging
Warning	ZerointernalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

 **Check safety-related optimization settings for data type conversions**

Check optimization settings in the model configuration that apply to data type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	EfficientFloat2IntCast	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related optimization settings for division arithmetic exceptions**

Check optimization settings in the model configuration that apply to division arithmetic exceptions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	NoFixptDivByZeroProtection	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related optimization settings for specified minimum and maximum values

Check optimization settings in the model configuration that apply to specified minimum and maximum values and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	UseSpecifiedMinMax	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

✓ Check safety-related settings for hardware implementation

Check 'Byte ordering' and 'Signed integer division rounds to' parameters

Identify inconsistencies or underspecification of hardware attributes that can lead to incorrect and inefficient generated code.

Passed

Target specification is consistent.

Check whether 'Production hardware' and 'Test hardware' match

Search for 'Test hardware is the same as production hardware' in the Configuration Parameters dialog box and check if it is selected. If it is cleared, identify whether target specifications match.

Passed

'Test hardware is the same as production hardware' is selected or is cleared and the target specifications match.

⚠ Check safety-related diagnostic settings for compatibility

Check diagnostic settings in the model configuration that affect compatibility and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	S-function upgrades needed (SFcnCompatibilityMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for parameters

Check diagnostic settings in the model configuration that apply to parameters and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect underflow (ParameterUnderflowMsg)	none	error
Warning	Detect precision loss (ParameterPrecisionLossMsg)	warning	error
Warning	Detect loss of tunability (ParameterTunabilityLossMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related diagnostic settings for Merge blocks

Check diagnostic settings in the model configuration that apply to Merge blocks and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Detect multiple driving blocks executing at the same time step (MergeDetectMultiDrivingBlocksExec)	error	error

- ✓ Check safety-related diagnostic settings for model initialization

Check diagnostic settings in the model configuration that affect model initialization and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Underspecified initialization detection (UnderspecifiedInitializationDetection)	Simplified	Simplified

⚠ Check safety-related diagnostic settings for data used for debugging

Check diagnostic settings in the model configuration that apply to data used for debugging and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for signal connectivity

Check diagnostic settings in the model configuration that apply to signal connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Signal label mismatch (SignalLabelMismatchMsg)	none	error
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error
Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error
Warning	Unconnected line (UnconnectedLineMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related diagnostic settings for bus connectivity

Check diagnostic settings in the model configuration that apply to bus connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unspecified bus object at root Outport block (RootOutportRequireBusObject)	warning	error
Warning	Element name mismatch (BusObjectLabelMismatch)	warning	error
Warning	Bus signal treated as vector (StrictBusMsg)	ErrorLevel1	ErrorOnBusTreatedAsVector
Warning	Non-bus signals treated as bus signals (NonBusSignalsTreatedAsBus)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ [Check safety-related diagnostic settings that apply to function-call connectivity](#)
Check diagnostic settings in the model configuration that apply to function-call connectivity and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	InvalidFcnCallConnMsg	error	error

Pass	Context-dependent inputs (FcnCallInpInsideContextMsg)	error	error
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 **Check safety-related diagnostic settings for type conversions**

Check diagnostic settings in the model configuration that apply to type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unnecessary type conversions (UnnecessaryDatatypeConvMsg)	none	warning
Warning	Vector/matrix block input conversion (VectorMatrixConversionMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for model referencing**

Check diagnostic settings in the model configuration that apply to model referencing and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Port and parameter mismatch (ModelReferenceIOMismatchMessage)	none	error
Warning	Invalid root Import/Outport block connection (ModelReferenceIOMsg)	none	error
Warning	Unsupported data logging (ModelReferenceDataLoggingMessage)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for Stateflow

Check diagnostic settings in the model configuration that apply to Stateflow and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values

Warning	Invalid input data access in chart initialization (SFInvalidInputDataAccessInChartInitDiag)	warning	error
Warning	Transition outside natural parent (SFTransitionOutsideNaturalParentDiag)	warning	error
Warning	Unreachable execution path (SFUnreachableExecutionPathDiag)	warning	error
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error
Warning	Transition action specified before condition action (SFTransitionActionBeforeConditionDiag)	warning	error
Warning	Absolute time temporal value shorter than sampling period (SFTemporalDelaySmallerThanSampleTimeDiag)	warning	error
Warning	Self-transition on leaf state (SFSelfTransitionDiag)	warning	error
Warning	'Execute-at-initialization' disabled in presence of input events (SFExecutionAtInitializationDiag)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for signal data**

Check diagnostic settings in the model configuration that apply to signal data and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Underspecified data types (UnderSpecifiedDataTypeMsg)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error
Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.



Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.

 Check for model elements that do not link to requirements

Check for model elements that do not link to a requirements document.

Warning

The following model elements do not link to a requirements document:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike

- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2
- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

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Recommended Action

For each model element in the list, in the Model Editor, right-click the model element, select Requirements, and specify a requirement.

Check the Traceability Matrix for viewing requirements and their links to blocks in Simulink model in a compact format.



Check for blocks not recommended for MISRA C:2012
Passed

Check configuration parameters for MISRA C:2012
Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile
Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile

Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile

Warning	InstructionSetExtensions	SSE2	None	
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Recommended Action

Modify the configuration parameters listed above to the recommended values.

Modeling Standards for ISO 26262 0 34 32 0 33 0

Display configuration management data

Error occurred during model compile.

Display model metrics and complexity report

Display number of elements and name, level, and depth of subsystems for the model or subsystem

Model metrics information

Display number of elements for Simulink blocks and Stateflow constructs

Summary

Element Type	Count
Import	25
Outport	29

SubSystem	58
-----------	----

Simulink

Block Type	Count
SubSystem	58
Outport	29
Reference	26
Inport	25
Constant	23
PMIOPort	17
Switch	11
Display	11
Scope	9
Gain	8
Sum	6
Integrator	4
LampBlock	3
S-Function	3
SimscapeBlock	3
DataTypeConversion	2
RelationalOperator	2
Demux	2
FromWorkspace	2
Saturate	2
Stop	1
Lookup_n-D	1

Product	1
TransferFcn	1
Step	1
From	1
Goto	1
EnablePort	1
PMComponent	1
BusSelector	1
Ground	1
Terminator	1

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Model complexity information

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 5

Subsystem Depth

Subsystem Name	Level	Depth
SelfBalancingEV_V2/ABS control System	1	3
SelfBalancingEV_V2/ABS control System/relative slip calculator" title="SelfBalancingEV_V2/ABS control System/relative slip calculator"	2	1

SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator	2	2
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller	3	1
SelfBalancingEV_V2/Acceleration Limit Tester" title="SelfBalancingEV_V2/Acceleration Limit Tester	1	1
SelfBalancingEV_V2/Correction Generator	1	2
SelfBalancingEV_V2/Correction Generator/PID Controller" title="SelfBalancingEV_V2/Correction Generator/PID Controller	2	1
SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1" title="SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1	2	1
SelfBalancingEV_V2/Input signal	1	1
SelfBalancingEV_V2/MODES	1	3
SelfBalancingEV_V2/MODES/Bike ON//OFF	2	2
SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero" title="SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero	3	1
SelfBalancingEV_V2/MODES/ECO_MODE	2	2
SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode" title="SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode	3	1
SelfBalancingEV_V2/MODES/SPORTS_MODE	2	2
SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode" title="SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode	3	1
SelfBalancingEV_V2/MODES/Self_Balance	2	2
SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance" title="SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance	3	1
SelfBalancingEV_V2/MODES/URBAN_MODE	2	2
SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode"	3	1

title="SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode		
SelfBalancingEV_V2/MODES/WRONG_INPUT	2	2
SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input" title="SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input	3	1
SelfBalancingEV_V2/Signal Builder1	1	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system	1	4
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery	2	3
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source	3	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare	4	1

To Zero2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2		
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1	2	1
SelfBalancingEV_V2/Subsystem	1	2
SelfBalancingEV_V2/Subsystem/Compare To Constant2" title="SelfBalancingEV_V2/Subsystem/Compare To Constant2	2	1
SelfBalancingEV_V2/Subsystem/Compare To Constant4" title="SelfBalancingEV_V2/Subsystem/Compare To Constant4	2	1
SelfBalancingEV_V2/System Switch	1	1
SelfBalancingEV_V2/Thermal Management	1	2
SelfBalancingEV_V2/Thermal Management/PID Controller" title="SelfBalancingEV_V2/Thermal Management/PID Controller	2	1
SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1" title="SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1	2	1
SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter" title="SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter	2	1

SelfBalancingEV_V2/Thermal Management/Solver Configuration1" title="SelfBalancingEV_V2/Thermal Management/Solver Configuration1	2	1
SelfBalancingEV_V2/Two Wheeled Bike	1	4
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block"	2	2
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1"	3	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block"	2	3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart"	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel"	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel"	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis"	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars"	4	1
SelfBalancingEV_V2/Two Wheeled Bike/World Frame" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame"	2	2
SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration"	3	1

^ Less

⚠ Check for unconnected objects

Identify unconnected lines, input ports, and output ports in the model

Warning

- The following lines, input ports, or output ports are not properly connected in system:
SelfBalancingEV_V2
- SelfBalancingEV_V2/MODES/WRONG_INPUT/Switch5

Recommended Action

Connect the blocks specified in the list

High-Integrity Systems 0 33 31 0 32 0

Simulink 0 24 4 0 8 0

Check usage of Abs blocks

Error occurred during model compile.

Check usage of remainder and reciprocal operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of square root operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of log and log10 operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of While Iterator blocks

Identify While Iterator blocks that do not have a positive value for the maximum number of iterations.

Passed

No While Iterator blocks found that might cause infinite loops

 Check usage of For and While Iterator subsystems

Identify sample time-dependent blocks in While and For Iterator subsystems.

Passed

No sample time-dependent blocks in For or While Iterator subsystems.

 Check usage of For Iterator blocks

Error occurred during model compile.

 Check usage of If blocks and If Action Subsystem blocks

Error occurred during model compile.

 Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Error occurred during model compile.

 Check usage of conditionally executed subsystems

Error occurred during model compile.

 Check usage of Merge blocks

Error occurred during model compile.

 Check relational comparisons on floating-point signals

Error occurred during model compile.

 Check usage of Relational Operator blocks

Error occurred during model compile.

 Check usage of Logical Operator blocks

Error occurred during model compile.

 Check usage of bitwise operations

Error occurred during model compile.

 Check for blocks not recommended for C/C++ production code deployment

Identify blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/Stop Simulation

- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Signal Builder1

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

blocks not supported by code generation or not recommended for C/C++ production code deployment. Identify

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/ABS control System/stopping distance
-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Thermal Management/PID Controller

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

1. Consider using the Model Discretizer to map these continuous blocks into discrete equivalents that support code generation. From a model, select **Model Discretizer** to access the Model Discretizer.

2. Not recommended for production code.

Check for inconsistent vector indexing methods

Identify inconsistent usage of vector indexing methods across the model or subsystem.

Passed

No blocks found using inconsistent indexing modes.

Check data types for blocks with index signals

Error occurred during model compile.

Check usage of variant blocks

Check variant block settings that might result in code that doesn't trace back to requirements.

Passed

No variant blocks have "VariantActivationTime" set to 'code compile'.

Check usage of lookup table blocks

Check for Lookup Table blocks, Prelookup blocks and Interpolation blocks that do not generate out-of-range checking code.

Passed

No lookup table blocks found to not generate out-of-range checking code.

Check usage of Signal Routing blocks

Error occurred during model compile.

Check for root Imports with missing properties

Identify Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions. Import block properties are specified with block parameters or Simulink signal data objects that explicitly resolve to the connected signal lines.

Passed

There are no Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions

- ☒ Check for root Imports with missing range definitions

Error occurred during model compile.

- ☒ Check for root Outports with missing range definitions

Error occurred during model compile.

- ☒ Check usage of Reciprocal Sqrt blocks

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

- ☒ Check usage of Assignment blocks

Error occurred during model compile.

- ✓ Check global variables in graphical functions

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

- ⚠ Check usage of Gain blocks

Identify Gain blocks with value which resolves to 1.

Warning

The following Gain blocks have value which resolves to 1.

- SelfBalancingEV_V2/ABS control System/Relative Slip
-
-
-
-

Recommended Action

Consider remodeling to remove the Gain blocks with values that resolve to 1

-  Check for length of user-defined object names

Error occurred during model compile.

-  Check data type of loop control variables

Error occurred during model compile.

-  Check for divide-by-zero calculations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

-  Check for parameter tunability ignored for referenced models

Check for models parameter tunability information specified using Model Parameter Configuration dialog boxes.

Passed

No parameters found that lose the tunability defined in the referenced models.

- ☒ Check usage of bit-shift operations

Error occurred during model compile.

- ⚠ Check safety-related diagnostic settings for variants

Check diagnostic settings in the model configuration that apply to variants and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Variant condition mismatch at signal source and destination (VariantConditionMismatch)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ⚠ Check for disabled and parameterized library links

Identify disabled and parameterized library links in the model.

Warning

The following blocks are disabled library links:

-

Recommended Action

To resolve the link:

1. On the Simulink canvas, select an appropriate block.
2. Right-click the block and select **Resolve Link** from the **Library Link** menu.

 **Check for unreachable and dead code**

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.



 **Check state machine type of Stateflow charts**

Identify Stateflow Charts whose State Machine Type differs from the type set in the Model Advisor Configuration Editor.

Passed

No Stateflow Charts found that deviate from recommended state machine type.

 **Check Stateflow charts for ordering of states and transitions**

Identify Stateflow charts that do not use explicit ordering of parallel states and transitions.

Passed

No Stateflow Charts found that deviate from recommended state/transition execution order settings.

 Check usage of recursions

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 Check Stateflow debugging options

Identify whether Stateflow debugging options are set appropriately.

Warning

The following Stateflow debugging options are not set appropriately:

Parameter	Current Value	Recommended Values
Wrap on overflow (IntegerOverflowMsg)	warning	error
Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Change the Stateflow debugging options to the recommended value.

-
- ✓ Check Stateflow charts for transition paths that cross parallel state boundaries
Identify transition paths that cross parallel state boundaries in Stateflow charts.

Passed

No transition paths crossing parallel state boundaries were found in Stateflow charts.

-
- ✓ Check for inappropriate use of transition paths
Identify transition paths that go into and out of a state without ending on a substate.

Passed

No transition paths found that go into and out of a state without ending on a substate.

-
- ✗ Check Stateflow charts for strong data typing

Error occurred during model compile.

- Check naming of ports in Stateflow charts
Identify mismatches between names of Stateflow ports and associated signals.

Passed

There are no name mismatches between Stateflow ports and associated signals

- Check scoping of Stateflow data objects
Identify Stateflow data objects with local scope that are not scoped at the chart level or below.

Passed

All Stateflow data objects are properly scoped.

- Check Stateflow charts for uniquely defined data objects
Identify local data identifiers that are defined in multiple scopes within a chart.

Passed

No Stateflow data identifiers found to be defined in multiple scopes.

- Check assignment operations in Stateflow charts

Error occurred during model compile.

- Check Stateflow charts for unary operators

Error occurred during model compile.



- Check usage of standardized MATLAB function headers
Identify usage of standardized function headers in MATLAB function.

Passed

No MATLAB function blocks found without standardized function headers.

- Check for MATLAB Function interfaces with inherited properties
Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity or data type properties.

Passed

No MATLAB Function interfaces with inherited complexity or data type properties found.

- Check MATLAB Function metrics
Identify MATLAB Functions that violate code and complexity metrics.

Passed

No MATLAB Function blocks found that violate code and complexity metrics.

- Check MATLAB Code Analyzer messages
Check MATLAB functions for %#codegen directive, MATLAB Code Analyzer messages, and justification message IDs.

Passed

No MATLAB Function blocks found with Code Analyzer messages, missing %#codegen directive or inappropriate usage of justification message IDs.

- Check if/elseif/else patterns in MATLAB Function blocks
Identify if/elseif/else patterns without appropriate else conditions in embedded MATLAB code.

Passed

No inappropriate if/elseif/else patterns found.

- Check switch statements in MATLAB Function blocks
Identify inappropriately used switch statements in embedded MATLAB code.

Passed

No inappropriately used switch statements found.

- Check usage of relational operators in MATLAB Function blocks

Error occurred during model compile.

-  Check usage of logical operators and functions in MATLAB Function blocks

Error occurred during model compile.

-  Check type and size of condition expressions

Error occurred during model compile.

-  Check MATLAB functions not supported for code generation

Identify MATLAB functions that are not supported for code generation.

Passed

All identified MATLAB functions are supported for code generation.

-  Metrics for generated code complexity

Error occurred during model compile.

 Configuration  0  0  24  0  8  0

-  Check safety-related diagnostic settings for data store memory

Check diagnostic settings in the model configuration that apply to data store memory and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values

Warning	Detect read before write (ReadBeforeWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after read (WriteAfterReadMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after write (WriteAfterWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Duplicate data store names (UniqueDataStoreMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for saving**

Check diagnostic settings in the model configuration that apply to saving model files.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block diagram contains disabled library links (SaveWithDisabledLinksMsg)	warning	error
Warning	Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related model referencing settings](#)

Check model referencing settings in the model configuration that might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Rebuild (UpdateModelReferenceTargets)	IfOutOfDateOrStructuralChange	AssumeUpToDate, IfOutOfDateOrStructuralChange
Pass	Pass fixed-size scalar root inputs by value for code generation (ModelReferencePassRootInputsByReference) *	on	on
Pass	Minimize algebraic loop occurrences (ModelReferenceMinAlgLoopOccurrences)	off	off

Recommended Action

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

 [Check safety-related code generation settings for comments](#)

Check code generation settings in the model configuration that apply comments and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ShowEliminatedStatement	off	on	GenerateComments
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ForceParamTrailComments	off	on	GenerateComments
Warning	ReqInCode	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, GenerateComments

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related code generation interface settings](#)

Check code generation interface settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	SupportNonFinite	on	off	
Warning	SupportAbsoluteTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	IncludeMdlTerminateFcn	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SuppressErrorHandler	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
Warning	MatFileLogging	on	off	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ Check safety-related solver settings for simulation time

Identify if the model Start time is set to 0 and Stop time is less than the Application Life Span.

Passed

No issues found with solver settings for simulation time.

⚠ Check safety-related solver settings for solver options

Check solver settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Type (SolverType)	Variable-step	Fixed-step
Warning	Solver (SolverName)	VariableStepAuto	FixedStepDiscrete

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

✓ Check safety-related solver settings for tasking and sample-time

Check solver settings in the model configuration that apply to tasking and sample-time constraints and might impact safety.

Passed

All constraints on model configuration parameters have been met.

⚠ Check safety-related diagnostic settings for solvers

Check diagnostic settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Algebraic loop (AlgebraicLoopMsg)	warning	error
Warning	Minimize algebraic loop (ArtificialAlgebraicLoopMsg)	warning	error
Warning	Block priority violation (BlockPriorityViolationMsg)	warning	error
Warning	Automatic solver parameter selection (SolverPrmCheckMsg)	none	error
Warning	State name clash (StateNameClashWarn)	none	warning

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for sample time

Check diagnostic settings in the model configuration that apply to sample time and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Source block specifies -1 sample time (InheritedTsInSrcMsg)	warning	error
Warning	Enforce sample times specified by Signal Specification blocks (SigSpecEnsureSampleTimeMsg)	warning	error
Warning	Single task data transfer (SingleTaskRateTransMsg)	none	error
Warning	Tasks with equal priority (TasksWithSamePriorityMsg)	warning	error
Warning	Unspecified inheritability of sample time (UnknownTsInhSupMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related optimization settings for logic signals](#)

Check optimization settings in the model configuration that apply to logic signals and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Implement logic signals as Boolean data (vs. double) (BooleanDataType)	on	on

 **Check safety-related block reduction optimization settings**

Check block reduction optimization settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block reduction (BlockReduction)	on	off

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related code generation settings for code style**

Check code generation settings in the model configuration that apply to code style and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Maximum, Standards	SystemTargetFile
Warning	PreserveExpressionOrder	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related optimization settings for application lifespan](#)

Check optimization settings in the model configuration that apply to application lifespan and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Application lifespan (days) (LifeSpan)	auto	inf

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related code generation identifier settings

Check code generation identifier settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Not Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target		
Warning	MangleLength	<i>Prerequisite constraint not met.</i>		1, 2, 3	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related optimization settings for data initialization

Check optimization settings in the model configuration that apply to data initialization and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ZeroExternalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging
Warning	ZerointernalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

Check safety-related optimization settings for data type conversions

Check optimization settings in the model configuration that apply to data type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	EfficientFloat2IntCast	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for division arithmetic exceptions

Check optimization settings in the model configuration that apply to division arithmetic exceptions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Warning	NoFixptDivByZeroProtection	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
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Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related optimization settings for specified minimum and maximum values**

Check optimization settings in the model configuration that apply to specified minimum and maximum values and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	UseSpecifiedMinMax	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related settings for hardware implementation

Check 'Byte ordering' and 'Signed integer division rounds to' parameters

Identify inconsistencies or underspecification of hardware attributes that can lead to incorrect and inefficient generated code.

Passed

Target specification is consistent.

Check whether 'Production hardware' and 'Test hardware' match

Search for 'Test hardware is the same as production hardware' in the Configuration Parameters dialog box and check if it is selected. If it is cleared, identify whether target specifications match.

Passed

'Test hardware is the same as production hardware' is selected or is cleared and the target specifications match.

-
- ⚠ Check safety-related diagnostic settings for compatibility

Check diagnostic settings in the model configuration that affect compatibility and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	S-function upgrades needed (SFcnCompatibilityMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for parameters**

Check diagnostic settings in the model configuration that apply to parameters and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect underflow (ParameterUnderflowMsg)	none	error
Warning	Detect precision loss (ParameterPrecisionLossMsg)	warning	error
Warning	Detect loss of tunability (ParameterTunabilityLossMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for Merge blocks**

Check diagnostic settings in the model configuration that apply to Merge blocks and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Detect multiple driving blocks executing at the same time step (MergeDetectMultiDrivingBlocksExec)	error	error

✓ Check safety-related diagnostic settings for model initialization

Check diagnostic settings in the model configuration that affect model initialization and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Underspecified initialization detection (UnderspecifiedInitializationDetection)	Simplified	Simplified

⚠ Check safety-related diagnostic settings for data used for debugging

Check diagnostic settings in the model configuration that apply to data used for debugging and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for signal connectivity

Check diagnostic settings in the model configuration that apply to signal connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Signal label mismatch (SignalLabelMismatchMsg)	none	error
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error

Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error
Warning	Unconnected line (UnconnectedLineMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related diagnostic settings for bus connectivity

Check diagnostic settings in the model configuration that apply to bus connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unspecified bus object at root Outport block (RootOutportRequireBusObject)	warning	error
Warning	Element name mismatch (BusObjectLabelMismatch)	warning	error
Warning	Bus signal treated as vector (StrictBusMsg)	ErrorLevel1	ErrorOnBusTreatedAsVector
Warning	Non-bus signals treated as bus signals (NonBusSignalsTreatedAsBus)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related diagnostic settings that apply to function-call connectivity

Check diagnostic settings in the model configuration that apply to function-call connectivity and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	InvalidFcnCallConnMsg	error	error
Pass	Context-dependent inputs (FcnCallInpInsideContextMsg)	error	error

-
- ⚠ Check safety-related diagnostic settings for type conversions

Check diagnostic settings in the model configuration that apply to type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unnecessary type conversions (UnnecessaryDatatypeConvMsg)	none	warning
Warning	Vector/matrix block input conversion (VectorMatrixConversionMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related diagnostic settings for model referencing

Check diagnostic settings in the model configuration that apply to model referencing and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Port and parameter mismatch (ModelReferenceIOMismatchMessage)	none	error
Warning	Invalid root Import/Outport block connection (ModelReferenceIMsg)	none	error
Warning	Unsupported data logging (ModelReferenceDataLoggingMessage)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for Stateflow

Check diagnostic settings in the model configuration that apply to Stateflow and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Invalid input data access in chart initialization (SFInvalidInputDataAccessInChartInitDiag)	warning	error
Warning	Transition outside natural parent (SFTransitionOutsideNaturalParentDiag)	warning	error
Warning	Unreachable execution path (SFUnreachableExecutionPathDiag)	warning	error
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error
Warning	Transition action specified before condition action (SFTransitionActionBeforeConditionDiag)	warning	error
Warning	Absolute time temporal value shorter than sampling period (SFTemporalDelaySmallerThanSampleTimeDiag)	warning	error
Warning	Self-transition on leaf state (SFSelfTransitionDiag)	warning	error
Warning	'Execute-at-initialization' disabled in presence of input events (SFExecutionAtInitializationDiag)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for signal data

Check diagnostic settings in the model configuration that apply to signal data and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Underspecified data types (UnderSpecifiedDataTypeMsg)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error
Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Naming 0 1 0 0 1 0

Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.

Requirements 0 0 1 0 0 0

Check for model elements that do not link to requirements

Check for model elements that do not link to a requirements document.

Warning

The following model elements do not link to a requirements document:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator

- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

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Recommended Action

For each model element in the list, in the Model Editor, right-click the model element, select Requirements, and specify a requirement.

Check the Traceability Matrix for viewing requirements and their links to blocks in Simulink model in a compact format.



-
- ✓ Check for blocks not recommended for MISRA C:2012

Passed

- ⚠ Check configuration parameters for MISRA C:2012

Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration

D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile
Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile
Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions	on	off	

	(MATLABDynamicMemAlloc)			
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile
Warning	InstructionSetExtensions	SSE2	None	

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Recommended Action

Modify the configuration parameters listed above to the recommended values.

 Modeling Standards for ISO 25119  0  34  32  0  33  0

 [Display configuration management data](#)
Error occurred during model compile.

Display model metrics and complexity report

Display number of elements and name, level, and depth of subsystems for the model or subsystem

Model metrics information

Display number of elements for Simulink blocks and Stateflow constructs

Summary

Element Type	Count
Import	25
Outport	29
SubSystem	58

Simulink

Block Type	Count
SubSystem	58
Outport	29
Reference	26
Import	25
Constant	23
PMIOPort	17
Switch	11
Display	11
Scope	9

Gain	8
Sum	6
Integrator	4
LampBlock	3
S-Function	3
SimscapeBlock	3
DataTypeConversion	2
RelationalOperator	2
Demux	2
FromWorkspace	2
Saturate	2
Stop	1
Lookup_n-D	1
Product	1
TransferFcn	1
Step	1
From	1
Goto	1
EnablePort	1
PMComponent	1
BusSelector	1
Ground	1
Terminator	1

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Model complexity information

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 5

Subsystem Depth

Subsystem Name	Level	Depth
SelfBalancingEV_V2/ABS control System	1	3
SelfBalancingEV_V2/ABS control System/relative slip calculator" title="SelfBalancingEV_V2/ABS control System/relative slip calculator"	2	1
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	2	2
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller	3	1
SelfBalancingEV_V2/Accelration Limit Tester" title="SelfBalancingEV_V2/Accelration Limit Tester	1	1
SelfBalancingEV_V2/Correction Generator	1	2
SelfBalancingEV_V2/Correction Generator/PID Controller" title="SelfBalancingEV_V2/Correction Generator/PID Controller"	2	1
SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1" title="SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1"	2	1
SelfBalancingEV_V2/Input signal	1	1
SelfBalancingEV_V2/MODES	1	3
SelfBalancingEV_V2/MODES/Bike ON//OFF	2	2
SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero" title="SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero"	3	1
SelfBalancingEV_V2/MODES/ECO_MODE	2	2

SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode" title="SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode	3	1
SelfBalancingEV_V2/MODES/SPORTS_MODE	2	2
SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode" title="SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode"	3	1
SelfBalancingEV_V2/MODES/Self_Balance	2	2
SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance" title="SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance"	3	1
SelfBalancingEV_V2/MODES/URBAN_MODE	2	2
SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode" title="SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode"	3	1
SelfBalancingEV_V2/MODES/WRONG_INPUT	2	2
SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input" title="SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input"	3	1
SelfBalancingEV_V2/Signal Builder1	1	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system"	1	4
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1"	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery"	2	3
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source"	3	1

SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1	2	1
SelfBalancingEV_V2/Subsystem	1	2

SelfBalancingEV_V2/Subsystem/Compare To Constant2" title="SelfBalancingEV_V2/Subsystem/Compare To Constant2	2	1
SelfBalancingEV_V2/Subsystem/Compare To Constant4" title="SelfBalancingEV_V2/Subsystem/Compare To Constant4	2	1
SelfBalancingEV_V2/System Switch	1	1
SelfBalancingEV_V2/Thermal Management	1	2
SelfBalancingEV_V2/Thermal Management/PID Controller" title="SelfBalancingEV_V2/Thermal Management/PID Controller	2	1
SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1" title="SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1	2	1
SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter" title="SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter	2	1
SelfBalancingEV_V2/Thermal Management/Solver Configuration1" title="SelfBalancingEV_V2/Thermal Management/Solver Configuration1	2	1
SelfBalancingEV_V2/Two Wheeled Bike	1	4
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block	2	2
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1	3	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block	2	3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars	4	1

SelfBalancingEV_V2/Two Wheeled Bike/World Frame" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame"	2	2
SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration"	3	1

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Check for unconnected objects

Identify unconnected lines, input ports, and output ports in the model

Warning

The following lines, input ports, or output ports are not properly connected in system:
 SelfBalancingEV_V2

- SelfBalancingEV_V2/MODES/WRONG_INPUT/Switch5

Recommended Action

Connect the blocks specified in the list

 High-Integrity Systems  0  33  31  0  32  0

 Simulink  0  24  4  0  8  0

 Check usage of Abs blocks

Error occurred during model compile.

 Check usage of remainder and reciprocal operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of square root operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of log and log10 operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of While Iterator blocks

Identify While Iterator blocks that do not have a positive value for the maximum number of iterations.

Passed

No While Iterator blocks found that might cause infinite loops

 Check usage of For and While Iterator subsystems

Identify sample time-dependent blocks in While and For Iterator subsystems.

Passed

No sample time-dependent blocks in For or While Iterator subsystems.

 Check usage of For Iterator blocks

Error occurred during model compile.

 Check usage of If blocks and If Action Subsystem blocks

Error occurred during model compile.

 Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Error occurred during model compile.

 Check usage of conditionally executed subsystems

Error occurred during model compile.

 Check usage of Merge blocks

Error occurred during model compile.

 Check relational comparisons on floating-point signals

Error occurred during model compile.

 Check usage of Relational Operator blocks

Error occurred during model compile.

 Check usage of Logical Operator blocks

Error occurred during model compile.

-  Check usage of bitwise operations

Error occurred during model compile.

-  Check for blocks not recommended for C/C++ production code deployment

Identify blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/Stop Simulation
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Signal Builder1

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

Identify
blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/ABS control System/stopping distance

-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Thermal Management/PID Controller

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

1. Consider using the Model Discretizer to map these continuous blocks into discrete equivalents that support code generation. From a model, select Model Discretizer to access the Model Discretizer.
2. Not recommended for production code.

Check for inconsistent vector indexing methods

Identify inconsistent usage of vector indexing methods across the model or subsystem.

Passed

No blocks found using inconsistent indexing modes.

Check data types for blocks with index signals

Error occurred during model compile.

Check usage of variant blocks

Check variant block settings that might result in code that doesn't trace back to requirements.

Passed

No variant blocks have "VariantActivationTime" set to 'code compile'.

Check usage of lookup table blocks

Check for Lookup Table blocks, Prelookup blocks and Interpolation blocks that do not generate out-of-range checking code.

Passed

No lookup table blocks found to not generate out-of-range checking code.

Check usage of Signal Routing blocks

Error occurred during model compile.

Check for root Imports with missing properties

Identify Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions. Import block properties are specified with block parameters or Simulink signal data objects that explicitly resolve to the connected signal lines.

Passed

There are no Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions

Check for root Imports with missing range definitions

Error occurred during model compile.

Check for root Outports with missing range definitions

Error occurred during model compile.

Check usage of Reciprocal Sqrt blocks

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check usage of Assignment blocks

Error occurred during model compile.

 Check global variables in graphical functions

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

 Check usage of Gain blocks

Identify Gain blocks with value which resolves to 1.

Warning

The following Gain blocks have value which resolves to 1.

- SelfBalancingEV_V2/ABS control System/Relative Slip
-
-
-
-

Recommended Action

Consider remodeling to remove the Gain blocks with values that resolve to 1

 Check for length of user-defined object names

Error occurred during model compile.

-  Check data type of loop control variables

Error occurred during model compile.

-  Check for divide-by-zero calculations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

-  Check for parameter tunability ignored for referenced models

Check for models parameter tunability information specified using Model Parameter Configuration dialog boxes.

Passed

No parameters found that lose the tunability defined in the referenced models.

-  Check usage of bit-shift operations

Error occurred during model compile.

-  Check safety-related diagnostic settings for variants

Check diagnostic settings in the model configuration that apply to variants and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values

Warning	Variant condition mismatch at signal source and destination (VariantConditionMismatch)	none	error
---------	--	------	-------

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check for disabled and parameterized library links**

Identify disabled and parameterized library links in the model.

Warning

The following blocks are disabled library links:

-

Recommended Action

To resolve the link:

1. On the Simulink canvas, select an appropriate block.
 2. Right-click the block and select **Resolve Link** from the **Library Link** menu.
-

 **Check for unreachable and dead code**

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check state machine type of Stateflow charts

Identify Stateflow Charts whose State Machine Type differs from the type set in the Model Advisor Configuration Editor.

Passed

No Stateflow Charts found that deviate from recommended state machine type.

Check Stateflow charts for ordering of states and transitions

Identify Stateflow charts that do not use explicit ordering of parallel states and transitions.

Passed

No Stateflow Charts found that deviate from recommended state/transition execution order settings.

Check usage of recursions

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library

'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 **Check Stateflow debugging options**

Identify whether Stateflow debugging options are set appropriately.

Warning

The following Stateflow debugging options are not set appropriately:

Parameter	Current Value	Recommended Values
Wrap on overflow (IntegerOverflowMsg)	warning	error
Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Change the Stateflow debugging options to the recommended value.

 **Check Stateflow charts for transition paths that cross parallel state boundaries**

Identify transition paths that cross parallel state boundaries in Stateflow charts.

Passed

No transition paths crossing parallel state boundaries were found in Stateflow charts.

- Check for inappropriate use of transition paths

Identify transition paths that go into and out of a state without ending on a substate.

Passed

No transition paths found that go into and out of a state without ending on a substate.

- Check Stateflow charts for strong data typing

Error occurred during model compile.

- Check naming of ports in Stateflow charts

Identify mismatches between names of Stateflow ports and associated signals.

Passed

There are no name mismatches between Stateflow ports and associated signals

- Check scoping of Stateflow data objects

Identify Stateflow data objects with local scope that are not scoped at the chart level or below.

Passed

All Stateflow data objects are properly scoped.

- Check Stateflow charts for uniquely defined data objects

Identify local data identifiers that are defined in multiple scopes within a chart.

Passed

No Stateflow data identifiers found to be defined in multiple scopes.

- Check assignment operations in Stateflow charts

Error occurred during model compile.

-  Check Stateflow charts for unary operators

Error occurred during model compile.

 MATLAB  0  4  0  0  7  0

-  Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

Passed

No MATLAB function blocks found without standardized function headers.

-  Check for MATLAB Function interfaces with inherited properties

Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity or data type properties.

Passed

No MATLAB Function interfaces with inherited complexity or data type properties found.

-  Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

Passed

No MATLAB Function blocks found that violate code and complexity metrics.

-  Check MATLAB Code Analyzer messages

Check MATLAB functions for %#codegen directive, MATLAB Code Analyzer messages, and justification message IDs.

Passed

No MATLAB Function blocks found with Code Analyzer messages, missing %#codegen directive or inappropriate usage of justification message IDs.

-  Check if/elseif/else patterns in MATLAB Function blocks

Identify if/elseif/else patterns without appropriate else conditions in embedded MATLAB code.

Passed

No inappropriate if/elseif/else patterns found.

- ✓ Check switch statements in MATLAB Function blocks

Identify inappropriately used switch statements in embedded MATLAB code.

Passed

No inappropriately used switch statements found.

- ✗ Check usage of relational operators in MATLAB Function blocks

Error occurred during model compile.

- ✗ Check usage of logical operators and functions in MATLAB Function blocks

Error occurred during model compile.

- ✗ Check type and size of condition expressions

Error occurred during model compile.

- ✓ Check MATLAB functions not supported for code generation

Identify MATLAB functions that are not supported for code generation.

Passed

All identified MATLAB functions are supported for code generation.

- ✗ Metrics for generated code complexity

Error occurred during model compile.

⚠ Check safety-related diagnostic settings for data store memory

Check diagnostic settings in the model configuration that apply to data store memory and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect read before write (ReadBeforeWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after read (WriteAfterReadMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after write (WriteAfterWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Duplicate data store names (UniqueDataStoreMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for saving

Check diagnostic settings in the model configuration that apply to saving model files.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block diagram contains disabled library links (SaveWithDisabledLinksMsg)	warning	error
Warning	Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ Check safety-related model referencing settings

Check model referencing settings in the model configuration that might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Rebuild (UpdateModelReferenceTargets)	IfOutOfDateOrStructuralChange	AssumeUpToDate, IfOutOfDateOrStructuralChange

Pass	Pass fixed-size scalar root inputs by value for code generation (ModelReferencePassRootInputsByReference) *	on	on
Pass	Minimize algebraic loop occurrences (ModelReferenceMinAlgLoopOccurrences)	off	off

Recommended Action

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

⚠ Check safety-related code generation settings for comments

Check code generation settings in the model configuration that apply comments and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ShowEliminatedStatement	off	on	GenerateComments
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Warning	ForceParamTrailComments	off	on	GenerateComments
Warning	ReqsInCode	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, GenerateComments

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related code generation interface settings](#)

Check code generation interface settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	SupportNonFinite	on	off	
Warning	SupportAbsoluteTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Warning	IncludeMdlTerminateFcn	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SuppressErrorStatus	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
Warning	MatFileLogging	on	off	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related solver settings for simulation time

Identify if the model Start time is set to 0 and Stop time is less than the Application Life Span.

Passed

No issues found with solver settings for simulation time.

- ⚠ Check safety-related solver settings for solver options

Check solver settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Type (SolverType)	Variable-step	Fixed-step
Warning	Solver (SolverName)	VariableStepAuto	FixedStepDiscrete

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related solver settings for tasking and sample-time**

Check solver settings in the model configuration that apply to tasking and sample-time constraints and might impact safety.

Passed

All constraints on model configuration parameters have been met.

 **Check safety-related diagnostic settings for solvers**

Check diagnostic settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Algebraic loop (AlgebraicLoopMsg)	warning	error
Warning	Minimize algebraic loop (ArtificialAlgebraicLoopMsg)	warning	error
Warning	Block priority violation (BlockPriorityViolationMsg)	warning	error
Warning	Automatic solver parameter selection (SolverPrmCheckMsg)	none	error
Warning	State name clash (StateNameClashWarn)	none	warning

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for sample time

Check diagnostic settings in the model configuration that apply to sample time and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Source block specifies -1 sample time (InheritedTsInSrcMsg)	warning	error
Warning	Enforce sample times specified by Signal Specification blocks (SigSpecEnsureSampleTimeMsg)	warning	error
Warning	Single task data transfer (SingleTaskRateTransMsg)	none	error
Warning	Tasks with equal priority (TasksWithSamePriorityMsg)	warning	error
Warning	Unspecified inheritability of sample time (UnknownTsInhSupMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related optimization settings for logic signals**

Check optimization settings in the model configuration that apply to logic signals and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Implement logic signals as Boolean data (vs. double) (BooleanDataType)	on	on

 **Check safety-related block reduction optimization settings**

Check block reduction optimization settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block reduction (BlockReduction)	on	off

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related code generation settings for code style

Check code generation settings in the model configuration that apply to code style and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Maximum, Standards	SystemTargetFile
Warning	PreserveExpressionOrder	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for application lifespan

Check optimization settings in the model configuration that apply to application lifespan and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Application lifespan (days) (LifeSpan)	auto	inf

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related code generation identifier settings

Check code generation identifier settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Not Recommended Values	Prerequisites

D - Warning	SystemTargetFile	Non-ERT based target	ERT based target		
Warning	MangleLength	<i>Prerequisite constraint not met.</i>		1, 2, 3	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related optimization settings for data initialization](#)

Check optimization settings in the model configuration that apply to data initialization and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ZeroExternalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile , CodeInterfacePackaging
Warning	ZeroInternalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile , CodeInterfacePackaging

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

 **Check safety-related optimization settings for data type conversions**

Check optimization settings in the model configuration that apply to data type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	EfficientFloat2IntCast	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for division arithmetic exceptions

Check optimization settings in the model configuration that apply to division arithmetic exceptions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	NoFixptDivByZeroProtection	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for specified minimum and maximum values

Check optimization settings in the model configuration that apply to specified minimum and maximum values and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	UseSpecifiedMinMax	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related settings for hardware implementation

Check 'Byte ordering' and 'Signed integer division rounds to' parameters

Identify inconsistencies or underspecification of hardware attributes that can lead to incorrect and inefficient generated code.

Passed

Target specification is consistent.

Check whether 'Production hardware' and 'Test hardware' match

Search for 'Test hardware is the same as production hardware' in the Configuration Parameters dialog box and check if it is selected. If it is cleared, identify whether target specifications match.

Passed

'Test hardware is the same as production hardware' is selected or is cleared and the target specifications match.

- ⚠ Check safety-related diagnostic settings for compatibility

Check diagnostic settings in the model configuration that affect compatibility and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	S-function upgrades needed (SFcnCompatibilityMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for parameters

Check diagnostic settings in the model configuration that apply to parameters and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect underflow (ParameterUnderflowMsg)	none	error
Warning	Detect precision loss (ParameterPrecisionLossMsg)	warning	error

Warning	Detect loss of tunability (ParameterTunabilityLossMsg)	warning	error
---------	---	---------	-------

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for Merge blocks**

Check diagnostic settings in the model configuration that apply to Merge blocks and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Detect multiple driving blocks executing at the same time step (MergeDetectMultiDrivingBlocksExec)	error	error

 **Check safety-related diagnostic settings for model initialization**

Check diagnostic settings in the model configuration that affect model initialization and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Underspecified initialization detection (UnderspecifiedInitializationDetection)	Simplified	Simplified

 **Check safety-related diagnostic settings for data used for debugging**

Check diagnostic settings in the model configuration that apply to data used for debugging and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for signal connectivity

Check diagnostic settings in the model configuration that apply to signal connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Signal label mismatch (SignalLabelMismatchMsg)	none	error
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error
Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error
Warning	Unconnected line (UnconnectedLineMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for bus connectivity

Check diagnostic settings in the model configuration that apply to bus connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unspecified bus object at root Outport block (RootOutportRequireBusObject)	warning	error
Warning	Element name mismatch (BusObjectNameMismatch)	warning	error
Warning	Bus signal treated as vector (StrictBusMsg)	ErrorLevel1	ErrorOnBusTreatedAsVector
Warning	Non-bus signals treated as bus signals (NonBusSignalsTreatedAsBus)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.



Check safety-related diagnostic settings that apply to function-call connectivity

Check diagnostic settings in the model configuration that apply to function-call connectivity and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	InvalidFcnCallConnMsg	error	error
Pass	Context-dependent inputs (FcnCallInpInsideContextMsg)	error	error

 **Check safety-related diagnostic settings for type conversions**

Check diagnostic settings in the model configuration that apply to type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unnecessary type conversions (UnnecessaryDatatypeConvMsg)	none	warning
Warning	Vector/matrix block input conversion (VectorMatrixConversionMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for model referencing**

Check diagnostic settings in the model configuration that apply to model referencing and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Port and parameter mismatch (ModelReferenceIOMismatchMessage)	none	error
Warning	Invalid root Import/Outport block connection (ModelReferenceIMsg)	none	error
Warning	Unsupported data logging (ModelReferenceDataLoggingMessage)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for Stateflow

Check diagnostic settings in the model configuration that apply to Stateflow and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Invalid input data access in chart initialization (SFInvalidInputDataAccessInChartInitDiag)	warning	error
Warning	Transition outside natural parent (SFTransitionOutsideNaturalParentDiag)	warning	error
Warning	Unreachable execution path (SFUnreachableExecutionPathDiag)	warning	error
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error
Warning	Transition action specified before condition action (SFTransitionActionBeforeConditionDiag)	warning	error
Warning	Absolute time temporal value shorter than sampling period (SFTemporalDelaySmallerThanSampleTimeDiag)	warning	error
Warning	Self-transition on leaf state (SFSelfTransitionDiag)	warning	error
Warning	'Execute-at-initialization' disabled in presence of input events (SFExecutionAtInitializationDiag)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related diagnostic settings for signal data](#)

Check diagnostic settings in the model configuration that apply to signal data and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Underspecified data types (UnderSpecifiedDataTypeMsg)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error
Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Naming 0 1 0 0 1

Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.

 Check for model elements that do not link to requirements

Check for model elements that do not link to a requirements document.

Warning

The following model elements do not link to a requirements document:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management

- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2
- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

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Recommended Action

For each model element in the list, in the Model Editor, right-click the model element, select Requirements, and specify a requirement.

Check the Traceability Matrix for viewing requirements and their links to blocks in Simulink model in a compact format.

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 Check for blocks not recommended for MISRA C:2012
Passed

 Check configuration parameters for MISRA C:2012
Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile

Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile
Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments,

				SystemTargetFil e
Warning	InstructionSetExtensions	SSE2	None	
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Recommended Action

Modify the configuration parameters listed above to the recommended values.

 Modeling Standards for EN 50128/EN 50657  0  34  32  0  33  0

 [Display configuration management data](#)

Error occurred during model compile.

 [Display model metrics and complexity report](#)

Display number of elements and name, level, and depth of subsystems for the model or subsystem

Model metrics information

Display number of elements for Simulink blocks and Stateflow constructs

Summary

Element Type	Count

Import	25
Outport	29
SubSystem	58

Simulink

Block Type	Count
SubSystem	58
Outport	29
Reference	26
Import	25
Constant	23
PMIOPort	17
Switch	11
Display	11
Scope	9
Gain	8
Sum	6
Integrator	4
LampBlock	3
S-Function	3
SimscapeBlock	3
DataTypeConversion	2
RelationalOperator	2
Demux	2
FromWorkspace	2
Saturate	2

Stop	1
Lookup_n-D	1
Product	1
TransferFcn	1
Step	1
From	1
Goto	1
EnablePort	1
PMComponent	1
BusSelector	1
Ground	1
Terminator	1

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Model complexity information

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 5

Subsystem Depth

Subsystem Name	Level	Depth
SelfBalancingEV_V2/ABS control System	1	3

SelfBalancingEV_V2/ABS control System/relative slip calculator" title="SelfBalancingEV_V2/ABS control System/relative slip calculator	2	1
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator	2	2
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller	3	1
SelfBalancingEV_V2/Accelration Limit Tester" title="SelfBalancingEV_V2/Accelration Limit Tester	1	1
SelfBalancingEV_V2/Correction Generator	1	2
SelfBalancingEV_V2/Correction Generator/PID Controller" title="SelfBalancingEV_V2/Correction Generator/PID Controller	2	1
SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1" title="SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1	2	1
SelfBalancingEV_V2/Input signal	1	1
SelfBalancingEV_V2/MODES	1	3
SelfBalancingEV_V2/MODES/Bike ON//OFF	2	2
SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero" title="SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero	3	1
SelfBalancingEV_V2/MODES/ECO_MODE	2	2
SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode" title="SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode	3	1
SelfBalancingEV_V2/MODES/SPORTS_MODE	2	2
SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode" title="SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode	3	1
SelfBalancingEV_V2/MODES/Self_Balance	2	2
SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance" title="SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance	3	1
SelfBalancingEV_V2/MODES/URBAN_MODE	2	2

SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode" title="SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode	3	1
SelfBalancingEV_V2/MODES/WRONG_INPUT	2	2
SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input" title="SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input	3	1
SelfBalancingEV_V2/Signal Builder1	1	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system	1	4
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery	2	3
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Controlled Voltage Source	3	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Current Measurement/Model	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model	3	2
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare	4	1

To Zero2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Compare To Zero2		
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic1	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery/Model/Saturation Dynamic2	4	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system	2	1
SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/powergui1	2	1
SelfBalancingEV_V2/Subsystem	1	2
SelfBalancingEV_V2/Subsystem/Compare To Constant2" title="SelfBalancingEV_V2/Subsystem/Compare To Constant2	2	1
SelfBalancingEV_V2/Subsystem/Compare To Constant4" title="SelfBalancingEV_V2/Subsystem/Compare To Constant4	2	1
SelfBalancingEV_V2/System Switch	1	1
SelfBalancingEV_V2/Thermal Management	1	2
SelfBalancingEV_V2/Thermal Management/PID Controller" title="SelfBalancingEV_V2/Thermal Management/PID Controller	2	1
SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1" title="SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1	2	1
SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter" title="SelfBalancingEV_V2/Thermal Management/Simulink-PS Converter	2	1

SelfBalancingEV_V2/Thermal Management/Solver Configuration1" title="SelfBalancingEV_V2/Thermal Management/Solver Configuration1	2	1
SelfBalancingEV_V2/Two Wheeled Bike	1	4
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block"	2	2
SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1" title="SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/PS-Simulink Converter1"	3	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block"	2	3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart"	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel"	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel"	4	1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis"	3	2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars"	4	1
SelfBalancingEV_V2/Two Wheeled Bike/World Frame" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame"	2	2
SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration" title="SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Solver Configuration"	3	1

^ Less

 *Check for unconnected objects*

Identify unconnected lines, input ports, and output ports in the model

Warning

- The following lines, input ports, or output ports are not properly connected in system:
SelfBalancingEV_V2
- SelfBalancingEV_V2/MODES/WRONG_INPUT/Switch5

Recommended Action

Connect the blocks specified in the list

High-Integrity Systems 0 33 31 0 32 0

Simulink 0 24 4 0 8 0

Check usage of Abs blocks

Error occurred during model compile.

Check usage of remainder and reciprocal operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

Check usage of square root operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

-  Check usage of log and log10 operations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

-  Check usage of While Iterator blocks

Identify While Iterator blocks that do not have a positive value for the maximum number of iterations.

Passed

No While Iterator blocks found that might cause infinite loops

-  Check usage of For and While Iterator subsystems

Identify sample time-dependent blocks in While and For Iterator subsystems.

Passed

No sample time-dependent blocks in For or While Iterator subsystems.

-  Check usage of For Iterator blocks

Error occurred during model compile.

-  Check usage of If blocks and If Action Subsystem blocks

Error occurred during model compile.

-  Check usage of Switch Case blocks and Switch Case Action Subsystem blocks

Error occurred during model compile.

-  Check usage of conditionally executed subsystems

Error occurred during model compile.

 Check usage of Merge blocks

Error occurred during model compile.

 Check relational comparisons on floating-point signals

Error occurred during model compile.

 Check usage of Relational Operator blocks

Error occurred during model compile.

 Check usage of Logical Operator blocks

Error occurred during model compile.

 Check usage of bitwise operations

Error occurred during model compile.

 Check for blocks not recommended for C/C++ production code deployment

Identify blocks not supported by code generation or not recommended for C/C++ production code deployment.

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/Stop Simulation

- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/Signal Builder1

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

blocks not supported by code generation or not recommended for C/C++ production code deployment. Identify

Warning

The following blocks are not recommended for C/C++ production code generation:

- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/ABS control System/stopping distance
-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Thermal Management/PID Controller

Recommended Action

Although Embedded Coder supports these blocks, they are not recommended for C/C++ production code deployment.

1. Consider using the Model Discretizer to map these continuous blocks into discrete equivalents that support code generation. From a model, select **Model Discretizer** to access the Model Discretizer.

2. Not recommended for production code.

Check for inconsistent vector indexing methods

Identify inconsistent usage of vector indexing methods across the model or subsystem.

Passed

No blocks found using inconsistent indexing modes.

Check data types for blocks with index signals

Error occurred during model compile.

Check usage of variant blocks

Check variant block settings that might result in code that doesn't trace back to requirements.

Passed

No variant blocks have "VariantActivationTime" set to 'code compile'.

Check usage of lookup table blocks

Check for Lookup Table blocks, Prelookup blocks and Interpolation blocks that do not generate out-of-range checking code.

Passed

No lookup table blocks found to not generate out-of-range checking code.

Check usage of Signal Routing blocks

Error occurred during model compile.

Check for root Imports with missing properties

Identify Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions. Import block properties are specified with block parameters or Simulink signal data objects that explicitly resolve to the connected signal lines.

Passed

There are no Import blocks in the top-level of the model with missing or inherited sample times, data types, or port dimensions

- ☒ Check for root Imports with missing range definitions

Error occurred during model compile.

- ☒ Check for root Outports with missing range definitions

Error occurred during model compile.

- ☒ Check usage of Reciprocal Sqrt blocks

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

- ☒ Check usage of Assignment blocks

Error occurred during model compile.

- ✓ Check global variables in graphical functions

Identify expressions that both read and write to the same global data.

Passed

No expressions found that both read and write to the same global data.

- ⚠ Check usage of Gain blocks

Identify Gain blocks with value which resolves to 1.

Warning

The following Gain blocks have value which resolves to 1.

- SelfBalancingEV_V2/ABS control System/Relative Slip
-
-
-
-

Recommended Action

Consider remodeling to remove the Gain blocks with values that resolve to 1

-  Check for length of user-defined object names

Error occurred during model compile.

-  Check data type of loop control variables

Error occurred during model compile.

-  Check for divide-by-zero calculations

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

-  Check for parameter tunability ignored for referenced models

Check for models parameter tunability information specified using Model Parameter Configuration dialog boxes.

Passed

No parameters found that lose the tunability defined in the referenced models.

- ☒ Check usage of bit-shift operations

Error occurred during model compile.

- ⚠ Check safety-related diagnostic settings for variants

Check diagnostic settings in the model configuration that apply to variants and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Variant condition mismatch at signal source and destination (VariantConditionMismatch)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ⚠ Check for disabled and parameterized library links

Identify disabled and parameterized library links in the model.

Warning

The following blocks are disabled library links:

-

Recommended Action

To resolve the link:

1. On the Simulink canvas, select an appropriate block.
2. Right-click the block and select **Resolve Link** from the **Library Link** menu.

 **Check for unreachable and dead code**

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.



 **Check state machine type of Stateflow charts**

Identify Stateflow Charts whose State Machine Type differs from the type set in the Model Advisor Configuration Editor.

Passed

No Stateflow Charts found that deviate from recommended state machine type.

 **Check Stateflow charts for ordering of states and transitions**

Identify Stateflow charts that do not use explicit ordering of parallel states and transitions.

Passed

No Stateflow Charts found that deviate from recommended state/transition execution order settings.

 Check usage of recursions

Error occurred during model compile.**NOTE:** This check applies to models configured for code generation.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

 Check Stateflow debugging options

Identify whether Stateflow debugging options are set appropriately.

Warning

The following Stateflow debugging options are not set appropriately:

Parameter	Current Value	Recommended Values
Wrap on overflow (IntegerOverflowMsg)	warning	error
Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Change the Stateflow debugging options to the recommended value.

-
- ✓ Check Stateflow charts for transition paths that cross parallel state boundaries
Identify transition paths that cross parallel state boundaries in Stateflow charts.

Passed

No transition paths crossing parallel state boundaries were found in Stateflow charts.

-
- ✓ Check for inappropriate use of transition paths
Identify transition paths that go into and out of a state without ending on a substate.

Passed

No transition paths found that go into and out of a state without ending on a substate.

-
- ✗ Check Stateflow charts for strong data typing

Error occurred during model compile.

- Check naming of ports in Stateflow charts
Identify mismatches between names of Stateflow ports and associated signals.

Passed

There are no name mismatches between Stateflow ports and associated signals

- Check scoping of Stateflow data objects
Identify Stateflow data objects with local scope that are not scoped at the chart level or below.

Passed

All Stateflow data objects are properly scoped.

- Check Stateflow charts for uniquely defined data objects
Identify local data identifiers that are defined in multiple scopes within a chart.

Passed

No Stateflow data identifiers found to be defined in multiple scopes.

- Check assignment operations in Stateflow charts

Error occurred during model compile.

- Check Stateflow charts for unary operators

Error occurred during model compile.



- Check usage of standardized MATLAB function headers
Identify usage of standardized function headers in MATLAB function.

Passed

No MATLAB function blocks found without standardized function headers.

- Check for MATLAB Function interfaces with inherited properties
Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity or data type properties.

Passed

No MATLAB Function interfaces with inherited complexity or data type properties found.

- Check MATLAB Function metrics
Identify MATLAB Functions that violate code and complexity metrics.

Passed

No MATLAB Function blocks found that violate code and complexity metrics.

- Check MATLAB Code Analyzer messages
Check MATLAB functions for %#codegen directive, MATLAB Code Analyzer messages, and justification message IDs.

Passed

No MATLAB Function blocks found with Code Analyzer messages, missing %#codegen directive or inappropriate usage of justification message IDs.

- Check if/elseif/else patterns in MATLAB Function blocks
Identify if/elseif/else patterns without appropriate else conditions in embedded MATLAB code.

Passed

No inappropriate if/elseif/else patterns found.

- Check switch statements in MATLAB Function blocks
Identify inappropriately used switch statements in embedded MATLAB code.

Passed

No inappropriately used switch statements found.

- Check usage of relational operators in MATLAB Function blocks

Error occurred during model compile.

-  Check usage of logical operators and functions in MATLAB Function blocks

Error occurred during model compile.

-  Check type and size of condition expressions

Error occurred during model compile.

-  Check MATLAB functions not supported for code generation

Identify MATLAB functions that are not supported for code generation.

Passed

All identified MATLAB functions are supported for code generation.

-  Metrics for generated code complexity

Error occurred during model compile.

 Configuration  0  0  24  0  8  0

-  Check safety-related diagnostic settings for data store memory

Check diagnostic settings in the model configuration that apply to data store memory and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values

Warning	Detect read before write (ReadBeforeWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after read (WriteAfterReadMsg)	UseLocalSettings	EnableAllAsError
Warning	Detect write after write (WriteAfterWriteMsg)	UseLocalSettings	EnableAllAsError
Warning	Duplicate data store names (UniqueDataStoreMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for saving**

Check diagnostic settings in the model configuration that apply to saving model files.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block diagram contains disabled library links (SaveWithDisabledLinksMsg)	warning	error
Warning	Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related model referencing settings](#)

Check model referencing settings in the model configuration that might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Rebuild (UpdateModelReferenceTargets)	IfOutOfDateOrStructuralChange	AssumeUpToDate, IfOutOfDateOrStructuralChange
Pass	Pass fixed-size scalar root inputs by value for code generation (ModelReferencePassRootInputsByReference) *	on	on
Pass	Minimize algebraic loop occurrences (ModelReferenceMinAlgLoopOccurrences)	off	off

Recommended Action

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

 [Check safety-related code generation settings for comments](#)

Check code generation settings in the model configuration that apply comments and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ShowEliminatedStatement	off	on	GenerateComments
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ForceParamTrailComments	off	on	GenerateComments
Warning	ReqInCode	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, GenerateComments

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related code generation interface settings](#)

Check code generation interface settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	SupportNonFinite	on	off	
Warning	SupportAbsoluteTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	IncludeMdlTerminateFcn	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SuppressErrorHandler	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
Warning	MatFileLogging	on	off	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

-
- ✓ Check safety-related solver settings for simulation time

Identify if the model Start time is set to 0 and Stop time is less than the Application Life Span.

Passed

No issues found with solver settings for simulation time.

⚠ Check safety-related solver settings for solver options

Check solver settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Type (SolverType)	Variable-step	Fixed-step
Warning	Solver (SolverName)	VariableStepAuto	FixedStepDiscrete

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

✓ Check safety-related solver settings for tasking and sample-time

Check solver settings in the model configuration that apply to tasking and sample-time constraints and might impact safety.

Passed

All constraints on model configuration parameters have been met.

⚠ Check safety-related diagnostic settings for solvers

Check diagnostic settings in the model configuration that apply to solvers and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Algebraic loop (AlgebraicLoopMsg)	warning	error
Warning	Minimize algebraic loop (ArtificialAlgebraicLoopMsg)	warning	error
Warning	Block priority violation (BlockPriorityViolationMsg)	warning	error
Warning	Automatic solver parameter selection (SolverPrmCheckMsg)	none	error
Warning	State name clash (StateNameClashWarn)	none	warning

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for sample time

Check diagnostic settings in the model configuration that apply to sample time and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Source block specifies -1 sample time (InheritedTsInSrcMsg)	warning	error
Warning	Enforce sample times specified by Signal Specification blocks (SigSpecEnsureSampleTimeMsg)	warning	error
Warning	Single task data transfer (SingleTaskRateTransMsg)	none	error
Warning	Tasks with equal priority (TasksWithSamePriorityMsg)	warning	error
Warning	Unspecified inheritability of sample time (UnknownTsInhSupMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 [Check safety-related optimization settings for logic signals](#)

Check optimization settings in the model configuration that apply to logic signals and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Implement logic signals as Boolean data (vs. double) (BooleanDataType)	on	on

 **Check safety-related block reduction optimization settings**

Check block reduction optimization settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Block reduction (BlockReduction)	on	off

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related code generation settings for code style**

Check code generation settings in the model configuration that apply to code style and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Maximum, Standards	SystemTargetFile
Warning	PreserveExpressionOrder	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for application lifespan

Check optimization settings in the model configuration that apply to application lifespan and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Application lifespan (days) (LifeSpan)	auto	inf

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related code generation identifier settings

Check code generation identifier settings in the model configuration that might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Not Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target		
Warning	MangleLength	<i>Prerequisite constraint not met.</i>		1, 2, 3	SystemTargetFile

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related optimization settings for data initialization

Check optimization settings in the model configuration that apply to data initialization and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	ZeroExternalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging
Warning	ZerointernalMemoryAtStartup*	<i>Prerequisite constraint not met.</i>	on	SystemTargetFile, CodeInterfacePackaging

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

* The Command-Line values provided in the table are reverse of the settings in the Configuration Parameters Dialog. Therefore, 'on' in the Command-Line corresponds to an "Off" setting in the dialog, and 'off' in the Command-Line corresponds to an "On" setting in the dialog.

Check safety-related optimization settings for data type conversions

Check optimization settings in the model configuration that apply to data type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	EfficientFloat2IntCast	off	on

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related optimization settings for division arithmetic exceptions

Check optimization settings in the model configuration that apply to division arithmetic exceptions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Warning	NoFixptDivByZeroProtection	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
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Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related optimization settings for specified minimum and maximum values**

Check optimization settings in the model configuration that apply to specified minimum and maximum values and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	UseSpecifiedMinMax	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related settings for hardware implementation

Check 'Byte ordering' and 'Signed integer division rounds to' parameters

Identify inconsistencies or underspecification of hardware attributes that can lead to incorrect and inefficient generated code.

Passed

Target specification is consistent.

Check whether 'Production hardware' and 'Test hardware' match

Search for 'Test hardware is the same as production hardware' in the Configuration Parameters dialog box and check if it is selected. If it is cleared, identify whether target specifications match.

Passed

'Test hardware is the same as production hardware' is selected or is cleared and the target specifications match.

-
- ⚠ Check safety-related diagnostic settings for compatibility

Check diagnostic settings in the model configuration that affect compatibility and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	S-function upgrades needed (SFcnCompatibilityMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for parameters**

Check diagnostic settings in the model configuration that apply to parameters and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Detect underflow (ParameterUnderflowMsg)	none	error
Warning	Detect precision loss (ParameterPrecisionLossMsg)	warning	error
Warning	Detect loss of tunability (ParameterTunabilityLossMsg)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 **Check safety-related diagnostic settings for Merge blocks**

Check diagnostic settings in the model configuration that apply to Merge blocks and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Detect multiple driving blocks executing at the same time step (MergeDetectMultiDrivingBlocksExec)	error	error

✓ Check safety-related diagnostic settings for model initialization

Check diagnostic settings in the model configuration that affect model initialization and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Underspecified initialization detection (UnderspecifiedInitializationDetection)	Simplified	Simplified

⚠ Check safety-related diagnostic settings for data used for debugging

Check diagnostic settings in the model configuration that apply to data used for debugging and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

⚠ Check safety-related diagnostic settings for signal connectivity

Check diagnostic settings in the model configuration that apply to signal connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Signal label mismatch (SignalLabelMismatchMsg)	none	error
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error

Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error
Warning	Unconnected line (UnconnectedLineMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related diagnostic settings for bus connectivity

Check diagnostic settings in the model configuration that apply to bus connectivity and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unspecified bus object at root Outport block (RootOutportRequireBusObject)	warning	error
Warning	Element name mismatch (BusObjectLabelMismatch)	warning	error
Warning	Bus signal treated as vector (StrictBusMsg)	ErrorLevel1	ErrorOnBusTreatedAsVector
Warning	Non-bus signals treated as bus signals (NonBusSignalsTreatedAsBus)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

- ✓ Check safety-related diagnostic settings that apply to function-call connectivity

Check diagnostic settings in the model configuration that apply to function-call connectivity and might impact safety.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	InvalidFcnCallConnMsg	error	error
Pass	Context-dependent inputs (FcnCallInpInsideContextMsg)	error	error

- ⚠ Check safety-related diagnostic settings for type conversions

Check diagnostic settings in the model configuration that apply to type conversions and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Unnecessary type conversions (UnnecessaryDatatypeConvMsg)	none	warning
Warning	Vector/matrix block input conversion (VectorMatrixConversionMsg)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Check safety-related diagnostic settings for model referencing

Check diagnostic settings in the model configuration that apply to model referencing and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Port and parameter mismatch (ModelReferenceIOMismatchMessage)	none	error
Warning	Invalid root Import/Outport block connection (ModelReferenceIMsg)	none	error
Warning	Unsupported data logging (ModelReferenceDataLoggingMessage)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for Stateflow

Check diagnostic settings in the model configuration that apply to Stateflow and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Invalid input data access in chart initialization (SFInvalidInputDataAccessInChartInitDiag)	warning	error
Warning	Transition outside natural parent (SFTransitionOutsideNaturalParentDiag)	warning	error
Warning	Unreachable execution path (SFUnreachableExecutionPathDiag)	warning	error
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error
Warning	Transition action specified before condition action (SFTransitionActionBeforeConditionDiag)	warning	error
Warning	Absolute time temporal value shorter than sampling period (SFTemporalDelaySmallerThanSampleTimeDiag)	warning	error
Warning	Self-transition on leaf state (SFSelfTransitionDiag)	warning	error
Warning	'Execute-at-initialization' disabled in presence of input events (SFExecutionAtInitializationDiag)	warning	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check safety-related diagnostic settings for signal data

Check diagnostic settings in the model configuration that apply to signal data and might impact safety.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Underspecified data types (UnderSpecifiedDataTypeMsg)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error
Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Simulation range checking (SignalRangeChecking)	none	error

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Naming 0 1 0 0 1 0

Check model file name

Identify inappropriate characters and length issues in model file name.

Passed

No issues found with model file name.

Check model object names

Error occurred during model compile.

Requirements 0 0 1 0 0 0

Check for model elements that do not link to requirements

Check for model elements that do not link to a requirements document.

Warning

The following model elements do not link to a requirements document:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator

- SelfBalancingEV_V2/Input signal
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/Signal Builder1
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

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Recommended Action

For each model element in the list, in the Model Editor, right-click the model element, select Requirements, and specify a requirement.

Check the Traceability Matrix for viewing requirements and their links to blocks in Simulink model in a compact format.



✓ Check for blocks not recommended for MISRA C:2012

Passed

⚠ Check configuration parameters for MISRA C:2012

Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values	Prerequisites
Warning	Model Verification block enabling (AssertControl)	UseLocalSettings	DisableAll	
D - Warning	UtilityFuncGeneration	Auto	Shared location	
Warning	GenerateSharedConstants	<i>Prerequisite constraint not met.</i>	off	UtilityFuncGeneration

D - Warning	SystemTargetFile	Non-ERT based target	ERT based target	
Warning	SupportContinuousTime	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	SupportNonInlinedSFcns	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	MatFileLogging	on	off	
Warning	ParenthesesLevel	<i>Prerequisite constraint not met.</i>	Standards, Maximum	SystemTargetFile
Warning	CastingMode	<i>Prerequisite constraint not met.</i>	Standards	SystemTargetFile
Warning	InternalIdentifier	<i>Prerequisite constraint not met.</i>	Shortened	SystemTargetFile
Warning	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfIntegersOnly	
Warning	EnableSignedLeftShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	EnableSignedRightShifts	<i>Prerequisite constraint not met.</i>	off	SystemTargetFile
Warning	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warning	Dynamic memory allocation in MATLAB functions	on	off	

	(MATLABDynamicMemAlloc)			
Warning	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warning	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warning	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warning	MATLABFcnDesc	<i>Prerequisite constraint not met.</i>	on	GenerateComments, SystemTargetFile
Warning	InstructionSetExtensions	SSE2	None	

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Recommended Action

Modify the configuration parameters listed above to the recommended values.

 Model Metrics - 0 X 1 ! 0 M 0 ✓ 9 D 0

 Count Metrics - 0 X 0 ! 0 M 0 ✓ 7 D 0

Simulink block metric

Display number of blocks in the model or subsystem.

Passed

Component	Blocks
..../Vehicle battery/Model	70
SelfBalancingEV_V2	45
SelfBalancingEV_V2/ABS control System	17
..../Vehicle battery/Model/E_dyn Charge	16
..../Vehicle battery/Model/Exp	15
..../PID Controller/Anti-windup	14
..../PID Controller/Filter/Cont. Filter	14
..../PID Controller/Anti-windup	14
..../PID Controller/Filter/Cont. Filter	14
..../Thermal Management/PID Controller/Filter	13
..../PID Controller/Filter	13
..../Physical Block/chassis/pillars	12
SelfBalancingEV_V2/Subsystem	10
..../wheel speed calculator	10
SelfBalancingEV_V2/Thermal Management	10
..../PID Controller/Integrator/Continuous	10
SelfBalancingEV_V2/MODES	10
..../PID Controller/Integrator/Continuous	10
..../Momentum Calculation Block	10
..../Thermal Management/PID Controller/Sum	9
..../PID Controller/Anti-windup/Passthrough	9
..../Correction Generator/PID Controller/Sum	9

..../PID Controller/Anti-windup/Passthrough	9
..../bang-bang controller	8
....e, current and voltage monitoring system	8
..../Vehicle battery	8
..../PID Controller/Integrator	8
..../PID Controller/Saturation/Passthrough	8
..../PID Controller/Saturation Fdbk	8
SelfBalancingEV_V2/Correction Generator	8
..../PID Controller/Integrator	8
..../PID Controller/Saturation/Passthrough	8
..../PID Controller/Saturation Fdbk	8
..../Vehicle battery/Current Measurement	7
..../PID Controller/Sum Fdbk	7
..../PID Controller/Sum Fdbk/Disabled	7
..../PID Controller/Tsamp - Integral	7
..../PID Controller/Ideal P Gain Fdbk	7
..../Thermal Management/PID Controller/N Gain	7
..../PID Controller/Parallel P Gain	7
..../PID Controller/Saturation	7
..../PID Controller/Sum Fdbk	7
..../PID Controller/Sum Fdbk/Disabled	7
..../PID Controller/Tsamp - Integral	7
..../PID Controller/Ideal P Gain Fdbk	7
..../PID Controller/N Gain	7
..../PID Controller/Parallel P Gain	7
..../PID Controller/Saturation	7
..../Two Wheeled Bike/Physical Block/chassis	7

..../relative slip calculator	6
..../PID Controller/Reset Signal/Disabled	6
..../Thermal Management/PID Controller/D Gain	6
..../D Gain/Internal Parameters	6
..../PID Controller/Filter ICs	6
..../Filter ICs/Internal IC - Filter	6
..../Thermal Management/PID Controller/I Gain	6
..../I Gain/Internal Parameters	6
..../PID Controller/Ideal P Gain	6
..../Integrator ICs/Internal IC	6
..../Thermal Management/PID Controller/N Copy	6
..../N Gain/Internal Parameters	6
..../Parallel P Gain/Internal Parameters	6
..../Simulink-PS Converter/EVAL_KEY	6
SelfBalancingEV_V2/MODES/Bike ON//OFF	6
SelfBalancingEV_V2/MODES/ECO_MODE	6
SelfBalancingEV_V2/MODES/SPORTS_MODE	6
SelfBalancingEV_V2/MODES/Self_Balance	6
SelfBalancingEV_V2/MODES/URBAN_MODE	6
..../PID Controller/Reset Signal/Disabled	6
..../PID Controller/D Gain	6
..../D Gain/Internal Parameters	6
..../PID Controller/Filter ICs	6
..../Filter ICs/Internal IC - Filter	6
..../PID Controller/I Gain	6
..../I Gain/Internal Parameters	6
..../PID Controller/Ideal P Gain	6

..../Integrator ICs/Internal IC	6
..../PID Controller/N Copy	6
..../N Gain/Internal Parameters	6
..../Parallel P Gain/Internal Parameters	6
..../Simulink-PS Converter1/EVAL_KEY	6
..../Two Wheeled Bike/Physical Block/cart	6
..../Controlled Current Source1	5
..../Model/Power loss estimation	5
..../Controlled Voltage Source	5
..../data acquisition system	5
..../PID Controller/Tracking Mode Sum	5
..../Tracking Mode Sum/Passthrough	5
..../Ideal P Gain Fdbk/Disabled	5
..../PID Controller/Sum/Sum_PID	5
..../PID Controller/Tsamp - Ngain	5
..../Tsamp - Integral/Passthrough	5
..../PID Controller/Integrator ICs	5
..../Thermal Management/PID Controller/P Copy	5
..../PID Controller/Tracking Mode	5
..../PID Controller/Tracking Mode/Disabled	5
..../PID Controller/postSat Signal	5
..../postSat Signal/Forward_Path	5
..../PID Controller/preSat Signal	5
..../preSat Signal/Forward_Path	5
..../Thermal Management/Simulink-PS Converter	5
SelfBalancingEV_V2/MODES/WRONC_INPUT	5
..../Acceleration Limit Tester	5

..../PID Controller/Tracking Mode Sum	5
..../Tracking Mode Sum/Passthrough	5
..../Ideal P Gain Fdbk/Disabled	5
..../PID Controller/Sum/Sum_PID	5
..../PID Controller/Tsamp - Ngain	5
..../Tsamp - Integral/Passthrough	5
..../PID Controller/Integrator ICs	5
..../PID Controller/P Copy	5
..../PID Controller/Tracking Mode	5
..../PID Controller/Tracking Mode/Disabled	5
..../PID Controller/postSat Signal	5
..../postSat Signal/Forward_Path	5
..../PID Controller/preSat Signal	5
..../preSat Signal/Forward_Path	5
..../Simulink-PS Converter1	5
SelfBalancingEV_V2/System Switch	5
SelfBalancingEV_V2/Two Wheeled Bike	5
..../PID Controller/Reset Signal	4
..../PID Controller/Tsamp - Ngain/Passthrough	4
..../PID Controller/Ideal P Gain/Passthrough	4
..../PID Controller/Reset Signal	4
..../PID Controller/Tsamp - Ngain/Passthrough	4
..../PID Controller/Ideal P Gain/Passthrough	4
..../Two Wheeled Bike/Physical Block	4
..../Two Wheeled Bike/World Frame	4
..../PID Controller/Saturation Fdbk/Disabled	3
..../PS-Simulink Converter1	3

..../PID Controller/Saturation Fdbk/Disabled	3
..../PS-Simulink Converter1	3
..../Physical Block/cart/left wheel	3
..../Physical Block/cart/right wheel	3
..../Current Measurement/Model	2
..../powergui1	2
..../PID Controller/N Copy/Disabled	2
..../PID Controller/P Copy/Disabled	2
..../PS-Simulink Converter1/EVAL_KEY	2
..../Thermal Management/Solver Configuration1	2
..../PID Controller/N Copy/Disabled	2
..../PID Controller/P Copy/Disabled	2
..../PS-Simulink Converter1/EVAL_KEY	2
..../World Frame/Solver Configuration	2

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 Subsystem metric

Display number of Subsystems in the model or subsystem.

Passed

Component	Subsystems
SelfBalancingEV_V2	11
..../PID Controller/Anti-windup	7
..../PID Controller/Anti-windup	7

..../Thermal Management/PID Controller/Filter	6
SelfBalancingEV_V2/MODES	6
..../PID Controller/Filter	6
..../Thermal Management/PID Controller/Sum	5
..../Correction Generator/PID Controller/Sum	5
..../PID Controller/Tsamp - Integral	4
..../PID Controller/Filter ICs	4
..../PID Controller/Ideal P Gain Fdbk	4
..../Thermal Management/PID Controller/N Copy	4
..../Thermal Management/PID Controller/N Gain	4
..../PID Controller/Parallel P Gain	4
..../PID Controller/Saturation Fdbk	4
..../PID Controller/Tsamp - Integral	4
..../PID Controller/Filter ICs	4
..../PID Controller/Ideal P Gain Fdbk	4
..../PID Controller/N Copy	4
..../PID Controller/N Gain	4
..../PID Controller/Parallel P Gain	4
..../PID Controller/Saturation Fdbk	4
..../Vehicle battery/Model	3
..../PID Controller/Sum Fdbk	3
..../Thermal Management/PID Controller/D Gain	3
..../Thermal Management/PID Controller/I Gain	3
..../PID Controller/Ideal P Gain	3
..../PID Controller/Integrator	3
..../PID Controller/Integrator ICs	3
..../Thermal Management/PID Controller/P Copy	3

..../PID Controller/Saturation	3
..../PID Controller/Sum Fdbk	3
..../PID Controller/D Gain	3
..../PID Controller/I Gain	3
..../PID Controller/Ideal P Gain	3
..../PID Controller/Integrator	3
..../PID Controller/Integrator ICs	3
..../PID Controller/P Copy	3
..../PID Controller/Saturation	3
SelfBalancingEV_V2/Two Wheeled Bike	3
SelfBalancingEV_V2/ABS control System	2
....e, current and voltage monitoring system	2
..../PID Controller/Reset Signal	2
..../PID Controller/Tracking Mode Sum	2
..../PID Controller/Tsamp - Ngain	2
..../PID Controller/Tracking Mode	2
..../PID Controller/postSat Signal	2
..../PID Controller/preSat Signal	2
..../PID Controller/Reset Signal	2
..../PID Controller/Tracking Mode Sum	2
..../PID Controller/Tsamp - Ngain	2
..../PID Controller/Tracking Mode	2
..../PID Controller/postSat Signal	2
..../PID Controller/preSat Signal	2
..../Two Wheeled Bike/Physical Block	2
..../Two Wheeled Bike/Physical Block/cart	2
..../wheel speed calculator	1

..../PS-Simulink Converter1	1
..../Thermal Management/Simulink-PS Converter	1
..../Thermal Management/Solver Configuration1	1
..../Simulink-PS Converter1	1
..../PS-Simulink Converter1	1
..../Two Wheeled Bike/Physical Block/chassis	1
..../World Frame/Solver Configuration	1
SelfBalancingEV_V2/Subsystem	0
..../relative slip calculator	0
..../bang-bang controller	0
..../Controlled Current Source1	0
..../Vehicle battery	0
..../Vehicle battery/Model/E_dyn Charge	0
..../Vehicle battery/Model/Exp	0
..../Model/Power loss estimation	0
..../Controlled Voltage Source	0
..../Vehicle battery/Current Measurement	0
..../Current Measurement/Model	0
..../data acquisition system	0
..../powergui1	0
SelfBalancingEV_V2/Thermal Management	0
..../PID Controller/Reset Signal/Disabled	0
..../Tracking Mode Sum/Passthrough	0
..../Ideal P Gain Fdbk/Disabled	0
..../PID Controller/Saturation Fdbk/Disabled	0
..../PID Controller/Sum Fdbk/Disabled	0
..../PID Controller/N Copy/Disabled	0

..../PID Controller/Sum/Sum_PID	0
..../PID Controller/Tsamp - Ngain/Passthrough	0
..../Tsample - Integral/Passthrough	0
..../PID Controller/Anti-windup/Passthrough	0
..../D Gain/Internal Parameters	0
..../PID Controller/Filter/Cont. Filter	0
..../Filter ICs/Internal IC - Filter	0
..../I Gain/Internal Parameters	0
..../PID Controller/Ideal P Gain/Passthrough	0
..../PID Controller/Integrator/Continuous	0
..../Integrator ICs/Internal IC	0
..../N Gain/Internal Parameters	0
..../PID Controller/P Copy/Disabled	0
..../Parallel P Gain/Internal Parameters	0
..../PID Controller/Saturation/Passthrough	0
..../PID Controller/Tracking Mode/Disabled	0
..../postSat Signal/Forward_Path	0
..../preSat Signal/Forward_Path	0
..../PS-Simulink Converter1/EVAL_KEY	0
..../Simulink-PS Converter/EVAL_KEY	0
SelfBalancingEV_V2/MODES/Bike ON//OFF	0
SelfBalancingEV_V2/MODES/ECO_MODE	0
SelfBalancingEV_V2/MODES/SPORTS_MODE	0
SelfBalancingEV_V2/MODES/Self_Balance	0
SelfBalancingEV_V2/MODES/URBAN_MODE	0
SelfBalancingEV_V2/MODES/WRONIG_INPUT	0
..../Acceleration Limit Tester	0

SelfBalancingEV_V2/Correction Generator	0
..../PID Controller/Reset Signal/Disabled	0
..../Tracking Mode Sum/Passthrough	0
..../Ideal P Gain Fdbk/Disabled	0
..../PID Controller/Saturation Fdbk/Disabled	0
..../PID Controller/Sum Fdbk/Disabled	0
..../PID Controller/N Copy/Disabled	0
..../PID Controller/Sum/Sum_PID	0
..../PID Controller/Tsamp - Ngain/Passthrough	0
..../T samp - Integral/Passthrough	0
..../PID Controller/Anti-windup/Passthrough	0
..../D Gain/Internal Parameters	0
..../PID Controller/Filter/Cont. Filter	0
..../Filter ICs/Internal IC - Filter	0
..../I Gain/Internal Parameters	0
..../PID Controller/Ideal P Gain/Passthrough	0
..../PID Controller/Integrator/Continuous	0
..../Integrator ICs/Internal IC	0
..../N Gain/Internal Parameters	0
..../PID Controller/P Copy/Disabled	0
..../Parallel P Gain/Internal Parameters	0
..../PID Controller/Saturation/Passthrough	0
..../PID Controller/Tracking Mode/Disabled	0
..../postSat Signal/Forward_Path	0
..../preSat Signal/Forward_Path	0
..../Simulink-PS Converter1/EVAL_KEY	0
SelfBalancingEV_V2/System Switch	0

....//Momentum Calculation Block	0
....//PS-Simulink Converter1/EVAL_KEY	0
....//Physical Block/cart/left wheel	0
....//Physical Block/cart/right wheel	0
....//Physical Block/chassis/pillars	0
....//Two Wheeled Bike/World Frame	0

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 [Library link metric](#)

Display number of library links in the model or subsystem.

Passed

Component	Library Links
SelfBalancingEV_V2	0
SelfBalancingEV_V2/Subsystem	0
SelfBalancingEV_V2/ABS control System	0
....//relative slip calculator	0
....//wheel speed calculator	0
....//bang-bang controller	0
....//e, current and voltage monitoring system	0
....//Controlled Current Source1	0
....//Vehicle battery	0
....//Vehicle battery/Model	0
....//Vehicle battery/Model/E_dyn Charge	0

..../Vehicle battery/Model/Exp	0
..../Model/Power loss estimation	0
..../Controlled Voltage Source	0
..../Vehicle battery/Current Measurement	0
..../Current Measurement/Model	0
..../data acquisition system	0
..../powergui1	0
SelfBalancingEV_V2/Thermal Management	0
..../PID Controller/Reset Signal	0
..../PID Controller/Reset Signal/Disabled	0
..../PID Controller/Tracking Mode Sum	0
..../Tracking Mode Sum/Passthrough	0
..../Ideal P Gain Fdbk/Disabled	0
..../PID Controller/Saturation Fdbk/Disabled	0
..../PID Controller/Sum Fdbk	0
..../PID Controller/Sum Fdbk/Disabled	0
..../PID Controller/N Copy/Disabled	0
..../Thermal Management/PID Controller/Sum	0
..../PID Controller/Sum/Sum_PID	0
..../PID Controller/Tsamp - Integral	0
..../PID Controller/Tsamp - Ngain	0
..../PID Controller/Tsamp - Ngain/Passthrough	0
..../Tsamp - Integral/Passthrough	0
..../PID Controller/Anti-windup	0
..../PID Controller/Anti-windup/Passthrough	0
..../Thermal Management/PID Controller/D Gain	0
..../D Gain/Internal Parameters	0

..../Thermal Management/PID Controller/Filter	0
..../PID Controller/Filter/Cont. Filter	0
..../PID Controller/Filter ICs	0
..../Filter ICs/Internal IC - Filter	0
..../Thermal Management/PID Controller/I Gain	0
..../I Gain/Internal Parameters	0
..../PID Controller/Ideal P Gain	0
..../PID Controller/Ideal P Gain/Passthrough	0
..../PID Controller/Ideal P Gain Fdbk	0
..../PID Controller/Integrator	0
..../PID Controller/Integrator/Continuous	0
..../PID Controller/Integrator ICs	0
..../Integrator ICs/Internal IC	0
..../Thermal Management/PID Controller/N Copy	0
..../Thermal Management/PID Controller/N Gain	0
..../N Gain/Internal Parameters	0
..../Thermal Management/PID Controller/P Copy	0
..../PID Controller/P Copy/Disabled	0
..../PID Controller/Parallel P Gain	0
..../Parallel P Gain/Internal Parameters	0
..../PID Controller/Saturation	0
..../PID Controller/Saturation/Passthrough	0
..../PID Controller/Saturation Fdbk	0
..../PID Controller/Tracking Mode	0
..../PID Controller/Tracking Mode/Disabled	0
..../PID Controller/postSat Signal	0
..../postSat Signal/Forward_Path	0

....//PID Controller/preSat Signal	0
....//preSat Signal/Forward_Path	0
....//PS-Simulink Converter1	0
....//PS-Simulink Converter1/EVAL_KEY	0
....//Thermal Management/Simulink-PS Converter	0
....//Simulink-PS Converter/EVAL_KEY	0
....//Thermal Management/Solver Configuration1	0
SelfBalancingEV_V2/MODES	0
SelfBalancingEV_V2/MODES/Bike ON//OFF	0
SelfBalancingEV_V2/MODES/ECO_MODE	0
SelfBalancingEV_V2/MODES/SPORTS_MODE	0
SelfBalancingEV_V2/MODES/Self_Balance	0
SelfBalancingEV_V2/MODES/URBAN_MODE	0
SelfBalancingEV_V2/MODES/WRONC_INPUT	0
....//Accelralation Limit Tester	0
SelfBalancingEV_V2/Correction Generator	0
....//PID Controller/Reset Signal	0
....//PID Controller/Reset Signal/Disabled	0
....//PID Controller/Tracking Mode Sum	0
....//Tracking Mode Sum/Passthrough	0
....//Ideal P Gain Fdbk/Disabled	0
....//PID Controller/Saturation Fdbk/Disabled	0
....//PID Controller/Sum Fdbk	0
....//PID Controller/Sum Fdbk/Disabled	0
....//PID Controller/N Copy/Disabled	0
....//Correction Generator/PID Controller/Sum	0
....//PID Controller/Sum/Sum_PID	0

..../PID Controller/Tsamp - Integral	0
..../PID Controller/Tsamp - Ngain	0
..../PID Controller/Tsamp - Ngain/Passthrough	0
..../Tsamp - Integral/Passthrough	0
..../PID Controller/Anti-windup	0
..../PID Controller/Anti-windup/Passthrough	0
..../PID Controller/D Gain	0
..../D Gain/Internal Parameters	0
..../PID Controller/Filter	0
..../PID Controller/Filter/Cont. Filter	0
..../PID Controller/Filter ICs	0
..../Filter ICs/Internal IC - Filter	0
..../PID Controller/I Gain	0
..../I Gain/Internal Parameters	0
..../PID Controller/Ideal P Gain	0
..../PID Controller/Ideal P Gain/Passthrough	0
..../PID Controller/Ideal P Gain Fdbk	0
..../PID Controller/Integrator	0
..../PID Controller/Integrator/Continuous	0
..../PID Controller/Integrator ICs	0
..../Integrator ICs/Internal IC	0
..../PID Controller/N Copy	0
..../PID Controller/N Gain	0
..../N Gain/Internal Parameters	0
..../PID Controller/P Copy	0
..../PID Controller/P Copy/Disabled	0
..../PID Controller/Parallel P Gain	0

..../Parallel P Gain/Internal Parameters	0
..../PID Controller/Saturation	0
..../PID Controller/Saturation/Passthrough	0
..../PID Controller/Saturation Fdbk	0
..../PID Controller/Tracking Mode	0
..../PID Controller/Tracking Mode/Disabled	0
..../PID Controller/postSat Signal	0
..../postSat Signal/Forward_Path	0
..../PID Controller/preSat Signal	0
..../preSat Signal/Forward_Path	0
..../Simulink-PS Converter1	0
..../Simulink-PS Converter1/EVAL_KEY	0
SelfBalancingEV_V2/System Switch	0
SelfBalancingEV_V2/Two Wheeled Bike	0
..../Momentum Calculation Block	0
..../PS-Simulink Converter1	0
..../PS-Simulink Converter1/EVAL_KEY	0
..../Two Wheeled Bike/Physical Block	0
..../Two Wheeled Bike/Physical Block/cart	0
..../Physical Block/cart/left wheel	0
..../Physical Block/cart/right wheel	0
..../Two Wheeled Bike/Physical Block/chassis	0
..../Physical Block/chassis/pillars	0
..../Two Wheeled Bike/World Frame	0
..../World Frame/Solver Configuration	0

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 Effective lines of MATLAB code metric

Display number of effective lines of MATLAB code.

No metric data available. Nothing to report for this metric.

Passed

 Stateflow chart objects metric

Display number of Stateflow objects in each chart.

No metric data available. Nothing to report for this metric.

Passed

 Lines of code for Stateflow blocks metric

Display number of code lines for Stateflow blocks.

No metric data available. Nothing to report for this metric.

Passed

 Subsystem depth metric

Display depth of subsystems in the model or subsystem.

Passed

Component	Subsystem Depth
..../Vehicle battery/Model/E_dyn Charge	4
..../Vehicle battery/Model/Exp	4
..../Model/Power loss estimation	4
..../Current Measurement/Model	4
..../PID Controller/Reset Signal/Disabled	4
..../Tracking Mode Sum/Passthrough	4

..../Ideal P Gain Fdbk/Disabled	4
..../PID Controller/Saturation Fdbk/Disabled	4
..../PID Controller/Sum Fdbk/Disabled	4
..../PID Controller/N Copy/Disabled	4
..../PID Controller/Sum/Sum_PID	4
..../PID Controller/Tsamp - Ngain/Passthrough	4
..../Tsample - Integral/Passthrough	4
..../PID Controller/Anti-windup/Passthrough	4
..../D Gain/Internal Parameters	4
..../PID Controller/Filter/Cont. Filter	4
..../Filter ICs/Internal IC - Filter	4
..../I Gain/Internal Parameters	4
..../PID Controller/Ideal P Gain/Passthrough	4
..../PID Controller/Integrator/Continuous	4
..../Integrator ICs/Internal IC	4
..../N Gain/Internal Parameters	4
..../PID Controller/P Copy/Disabled	4
..../Parallel P Gain/Internal Parameters	4
..../PID Controller/Saturation/Passthrough	4
..../PID Controller/Tracking Mode/Disabled	4
..../postSat Signal/Forward_Path	4
..../preSat Signal/Forward_Path	4
..../PID Controller/Reset Signal/Disabled	4
..../Tracking Mode Sum/Passthrough	4
..../Ideal P Gain Fdbk/Disabled	4
..../PID Controller/Saturation Fdbk/Disabled	4
..../PID Controller/Sum Fdbk/Disabled	4

..../PID Controller/N Copy/Disabled	4
..../PID Controller/Sum/Sum_PID	4
..../PID Controller/Tsamp - Ngain/Passthrough	4
..../Tsample - Integral/Passthrough	4
..../PID Controller/Anti-windup/Passthrough	4
..../D Gain/Internal Parameters	4
..../PID Controller/Filter/Cont. Filter	4
..../Filter ICs/Internal IC - Filter	4
..../I Gain/Internal Parameters	4
..../PID Controller/Ideal P Gain/Passthrough	4
..../PID Controller/Integrator/Continuous	4
..../Integrator ICs/Internal IC	4
..../N Gain/Internal Parameters	4
..../PID Controller/P Copy/Disabled	4
..../Parallel P Gain/Internal Parameters	4
..../PID Controller/Saturation/Passthrough	4
..../PID Controller/Tracking Mode/Disabled	4
..../postSat Signal/Forward_Path	4
..../preSat Signal/Forward_Path	4
..../PS-Simulink Converter1/EVAL_KEY	4
..../Physical Block/cart/left wheel	4
..../Physical Block/cart/right wheel	4
..../Physical Block/chassis/pillars	4
..../bang-bang controller	3
..../Vehicle battery/Model	3
..../Controlled Voltage Source	3
..../Vehicle battery/Current Measurement	3

..../PID Controller/Reset Signal	3
..../PID Controller/Tracking Mode Sum	3
..../PID Controller/Sum Fdbk	3
..../Thermal Management/PID Controller/Sum	3
..../PID Controller/Tsamp - Integral	3
..../PID Controller/Tsamp - Ngain	3
..../PID Controller/Anti-windup	3
..../Thermal Management/PID Controller/D Gain	3
..../Thermal Management/PID Controller/Filter	3
..../PID Controller/Filter ICs	3
..../Thermal Management/PID Controller/I Gain	3
..../PID Controller/Ideal P Gain	3
..../PID Controller/Ideal P Gain Fdbk	3
..../PID Controller/Integrator	3
..../PID Controller/Integrator ICs	3
..../Thermal Management/PID Controller/N Copy	3
..../Thermal Management/PID Controller/N Gain	3
..../Thermal Management/PID Controller/P Copy	3
..../PID Controller/Parallel P Gain	3
..../PID Controller/Saturation	3
..../PID Controller/Saturation Fdbk	3
..../PID Controller/Tracking Mode	3
..../PID Controller/postSat Signal	3
..../PID Controller/preSat Signal	3
..../PS-Simulink Converter1/EVAL_KEY	3
..../Simulink-PS Converter/EVAL_KEY	3
..../PID Controller/Reset Signal	3

..../PID Controller/Tracking Mode Sum	3
..../PID Controller/Sum Fdbk	3
..../Correction Generator/PID Controller/Sum	3
..../PID Controller/Tsamp - Integral	3
..../PID Controller/Tsamp - Ngain	3
..../PID Controller/Anti-windup	3
..../PID Controller/D Gain	3
..../PID Controller/Filter	3
..../PID Controller/Filter ICs	3
..../PID Controller/I Gain	3
..../PID Controller/Ideal P Gain	3
..../PID Controller/Ideal P Gain Fdbk	3
..../PID Controller/Integrator	3
..../PID Controller/Integrator ICs	3
..../PID Controller/N Copy	3
..../PID Controller/N Gain	3
..../PID Controller/P Copy	3
..../PID Controller/Parallel P Gain	3
..../PID Controller/Saturation	3
..../PID Controller/Saturation Fdbk	3
..../PID Controller/Tracking Mode	3
..../PID Controller/postSat Signal	3
..../PID Controller/preSat Signal	3
..../Simulink-PS Converter1/EVAL_KEY	3
..../PS-Simulink Converter1	3
..../Two Wheeled Bike/Physical Block/cart	3
..../Two Wheeled Bike/Physical Block/chassis	3

..../World Frame/Solver Configuration	3
..../relative slip calculator	2
..../wheel speed calculator	2
..../Controlled Current Source1	2
..../Vehicle battery	2
..../data acquisition system	2
..../powergui1	2
..../PS-Simulink Converter1	2
..../Thermal Management/Simulink-PS Converter	2
..../Thermal Management/Solver Configuration1	2
SelfBalancingEV_V2/MODES/Bike ON//OFF	2
SelfBalancingEV_V2/MODES/ECO_MODE	2
SelfBalancingEV_V2/MODES/SPORTS_MODE	2
SelfBalancingEV_V2/MODES/Self_Balance	2
SelfBalancingEV_V2/MODES/URBAN_MODE	2
SelfBalancingEV_V2/MODES/WRONG_INPUT	2
..../Simulink-PS Converter1	2
..../Momentum Calculation Block	2
..../Two Wheeled Bike/Physical Block	2
..../Two Wheeled Bike/World Frame	2
SelfBalancingEV_V2/Subsystem	1
SelfBalancingEV_V2/ABS control System	1
....e, current and voltage monitoring system	1
SelfBalancingEV_V2/Thermal Management	1
SelfBalancingEV_V2/MODES	1
..../Acceleration Limit Tester	1
SelfBalancingEV_V2/Correction Generator	1

SelfBalancingEV_V2/System Switch	1
SelfBalancingEV_V2/Two Wheeled Bike	1
SelfBalancingEV_V2	0

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Cyclomatic complexity metric

Error occurred during model compile.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Prismatic Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Revolute Joint'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel tyre '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel /left wheel wheel body'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 '.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1'.Failed

to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration'.Failed to load library 'sm_lib' referenced by 'SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame'.

[Readability Metrics](#) 0 0 0 0 2 0

[Nondescriptive block name metric](#)

Display non-descriptive names of Import, Outport and Subsystem blocks.

Passed

Component	Nondescriptive Names
..../Vehicle battery/Model/E_dyn Charge	2
..../PID Controller/Ideal P Gain	2
..../PID Controller/Ideal P Gain/Passthrough	2
..../PID Controller/Ideal P Gain Fdbk	2
..../PID Controller/Saturation	2
..../PID Controller/Saturation/Passthrough	2
..../PID Controller/Saturation Fdbk	2
SelfBalancingEV_V2/MODES/Bike ON//OFF	2
SelfBalancingEV_V2/MODES/ECO_MODE	2
SelfBalancingEV_V2/MODES/SPORTS_MODE	2
SelfBalancingEV_V2/MODES/URBAN_MODE	2
..../PID Controller/Ideal P Gain	2
..../PID Controller/Ideal P Gain/Passthrough	2
..../PID Controller/Ideal P Gain Fdbk	2
..../PID Controller/Saturation	2

....//PID Controller/Saturation/Passthrough	2
....//PID Controller/Saturation Fdbk	2
SelfBalancingEV_V2	1
SelfBalancingEV_V2/Subsystem	1
....//data acquisition system	1
....//PID Controller/Reset Signal	1
....//PID Controller/Reset Signal/Disabled	1
....//PID Controller/Tracking Mode Sum	1
....//Tracking Mode Sum/Passthrough	1
....//Ideal P Gain Fdbk/Disabled	1
....//PID Controller/Saturation Fdbk/Disabled	1
....//PID Controller/Sum Fdbk	1
....//Thermal Management/PID Controller/Sum	1
....//PID Controller/Sum/Sum_PID	1
....//PID Controller/Tsamp - Integral	1
....//PID Controller/Tsamp - Ngain	1
....//PID Controller/Tsamp - Ngain/Passthrough	1
....//Tsamp - Integral/Passthrough	1
....//PID Controller/Anti-windup	1
....//PID Controller/Anti-windup/Passthrough	1
....//Thermal Management/PID Controller/D Gain	1
....//D Gain/Internal Parameters	1
....//PID Controller/Filter ICs	1
....//Filter ICs/Internal IC - Filter	1
....//Thermal Management/PID Controller/I Gain	1
....//I Gain/Internal Parameters	1
....//PID Controller/Integrator ICs	1

..../Integrator ICs/Internal IC	1
..../Thermal Management/PID Controller/N Copy	1
..../Thermal Management/PID Controller/N Gain	1
..../N Gain/Internal Parameters	1
..../Thermal Management/PID Controller/P Copy	1
..../PID Controller/Parallel P Gain	1
..../Parallel P Gain/Internal Parameters	1
..../PID Controller/Tracking Mode	1
..../PID Controller/postSat Signal	1
..../postSat Signal/Forward_Path	1
..../PID Controller/preSat Signal	1
..../preSat Signal/Forward_Path	1
SelfBalancingEV_V2/MODES/Self_Balance	1
SelfBalancingEV_V2/MODES/WRONC_INPUT	1
..../PID Controller/Reset Signal	1
..../PID Controller/Reset Signal/Disabled	1
..../PID Controller/Tracking Mode Sum	1
..../Tracking Mode Sum/Passthrough	1
..../Ideal P Gain Fdbk/Disabled	1
..../PID Controller/Saturation Fdbk/Disabled	1
..../PID Controller/Sum Fdbk	1
..../Correction Generator/PID Controller/Sum	1
..../PID Controller/Sum/Sum_PID	1
..../PID Controller/Tsamp - Integral	1
..../PID Controller/Tsamp - Ngain	1
..../PID Controller/Tsamp - Ngain/Passthrough	1
..../Tsample - Integral/Passthrough	1

..../PID Controller/Anti-windup	1
..../PID Controller/Anti-windup/Passthrough	1
..../PID Controller/D Gain	1
..../D Gain/Internal Parameters	1
..../PID Controller/Filter ICs	1
..../Filter ICs/Internal IC - Filter	1
..../PID Controller/I Gain	1
..../I Gain/Internal Parameters	1
..../PID Controller/Integrator ICs	1
..../Integrator ICs/Internal IC	1
..../PID Controller/N Copy	1
..../PID Controller/N Gain	1
..../N Gain/Internal Parameters	1
..../PID Controller/P Copy	1
..../PID Controller/Parallel P Gain	1
..../Parallel P Gain/Internal Parameters	1
..../PID Controller/Tracking Mode	1
..../PID Controller/postSat Signal	1
..../postSat Signal/Forward_Path	1
..../PID Controller/preSat Signal	1
..../preSat Signal/Forward_Path	1
SelfBalancingEV_V2/ABS control System	0
..../relative slip calculator	0
..../wheel speed calculator	0
..../bang-bang controller	0
....e, current and voltage monitoring system	0
..../Controlled Current Source1	0

..../Vehicle battery	0
..../Vehicle battery/Model	0
..../Vehicle battery/Model/Exp	0
..../Model/Power loss estimation	0
..../Controlled Voltage Source	0
..../Vehicle battery/Current Measurement	0
..../Current Measurement/Model	0
..../powergui1	0
SelfBalancingEV_V2/Thermal Management	0
..../PID Controller/Sum Fdbk/Disabled	0
..../PID Controller/N Copy/Disabled	0
..../Thermal Management/PID Controller/Filter	0
..../PID Controller/Filter/Cont. Filter	0
..../PID Controller/Integrator	0
..../PID Controller/Integrator/Continuous	0
..../PID Controller/P Copy/Disabled	0
..../PID Controller/Tracking Mode/Disabled	0
..../PS-Simulink Converter1	0
..../PS-Simulink Converter1/EVAL_KEY	0
..../Thermal Management/Simulink-PS Converter	0
..../Simulink-PS Converter/EVAL_KEY	0
..../Thermal Management/Solver Configuration1	0
SelfBalancingEV_V2/MODES	0
..../Acceleration Limit Tester	0
SelfBalancingEV_V2/Correction Generator	0
..../PID Controller/Sum Fdbk/Disabled	0
..../PID Controller/N Copy/Disabled	0

..../PID Controller/Filter	0
..../PID Controller/Filter/Cont. Filter	0
..../PID Controller/Integrator	0
..../PID Controller/Integrator/Continuous	0
..../PID Controller/P Copy/Disabled	0
..../PID Controller/Tracking Mode/Disabled	0
..../Simulink-PS Converter1	0
..../Simulink-PS Converter1/EVAL_KEY	0
SelfBalancingEV_V2/System Switch	0
SelfBalancingEV_V2/Two Wheeled Bike	0
..../Momentum Calculation Block	0
..../PS-Simulink Converter1	0
..../PS-Simulink Converter1/EVAL_KEY	0
..../Two Wheeled Bike/Physical Block	0
..../Two Wheeled Bike/Physical Block/cart	0
..../Physical Block/cart/left wheel	0
..../Physical Block/cart/right wheel	0
..../Two Wheeled Bike/Physical Block/chassis	0
..../Physical Block/chassis/pillars	0
..../Two Wheeled Bike/World Frame	0
..../World Frame/Solver Configuration	0

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 **Data and structure layer separation metric**

Display data and structure layer separation, defined by MAB modeling guideline db_0143.

Passed

Component	Non-conforming Blocks
..../Vehicle battery/Model	37
SelfBalancingEV_V2	34
SelfBalancingEV_V2/ABS control System	10
..../wheel speed calculator	6
..../Vehicle battery	6
..../Two Wheeled Bike/Physical Block/chassis	6
..../Vehicle battery/Current Measurement	4
..../Two Wheeled Bike/Physical Block/cart	4
....e, current and voltage monitoring system	3
..../Two Wheeled Bike/Physical Block	2
..../PS-Simulink Converter1	1
..../Thermal Management/Simulink-PS Converter	1
..../Thermal Management/Solver Configuration1	1
..../Simulink-PS Converter1	1
SelfBalancingEV_V2/Two Wheeled Bike	1
..../PS-Simulink Converter1	1
..../World Frame/Solver Configuration	1
SelfBalancingEV_V2/Subsystem	0
..../relative slip calculator	0
..../bang-bang controller	0
..../Controlled Current Source1	0
..../Vehicle battery/Model/E_dyn Charge	0
..../Vehicle battery/Model/Exp	0

..../Model/Power loss estimation	0
..../Controlled Voltage Source	0
..../Current Measurement/Model	0
..../data acquisition system	0
..../powergui1	0
SelfBalancingEV_V2/Thermal Management	0
..../PID Controller/Reset Signal	0
..../PID Controller/Reset Signal/Disabled	0
..../PID Controller/Tracking Mode Sum	0
..../Tracking Mode Sum/Passthrough	0
..../Ideal P Gain Fdbk/Disabled	0
..../PID Controller/Saturation Fdbk/Disabled	0
..../PID Controller/Sum Fdbk	0
..../PID Controller/Sum Fdbk/Disabled	0
..../PID Controller/N Copy/Disabled	0
..../Thermal Management/PID Controller/Sum	0
..../PID Controller/Sum/Sum_PID	0
..../PID Controller/Tsamp - Integral	0
..../PID Controller/Tsamp - Ngain	0
..../PID Controller/Tsamp - Ngain/Passthrough	0
..../Tsamp - Integral/Passthrough	0
..../PID Controller/Anti-windup	0
..../PID Controller/Anti-windup/Passthrough	0
..../Thermal Management/PID Controller/D Gain	0
..../D Gain/Internal Parameters	0
..../Thermal Management/PID Controller/Filter	0
..../PID Controller/Filter/Cont. Filter	0

..../PID Controller/Filter ICs	0
..../Filter ICs/Internal IC - Filter	0
..../Thermal Management/PID Controller/I Gain	0
..../I Gain/Internal Parameters	0
..../PID Controller/Ideal P Gain	0
..../PID Controller/Ideal P Gain/Passthrough	0
..../PID Controller/Ideal P Gain Fdbk	0
..../PID Controller/Integrator	0
..../PID Controller/Integrator/Continuous	0
..../PID Controller/Integrator ICs	0
..../Integrator ICs/Internal IC	0
..../Thermal Management/PID Controller/N Copy	0
..../Thermal Management/PID Controller/N Gain	0
..../N Gain/Internal Parameters	0
..../Thermal Management/PID Controller/P Copy	0
..../PID Controller/P Copy/Disabled	0
..../PID Controller/Parallel P Gain	0
..../Parallel P Gain/Internal Parameters	0
..../PID Controller/Saturation	0
..../PID Controller/Saturation/Passthrough	0
..../PID Controller/Saturation Fdbk	0
..../PID Controller/Tracking Mode	0
..../PID Controller/Tracking Mode/Disabled	0
..../PID Controller/postSat Signal	0
..../postSat Signal/Forward_Path	0
..../PID Controller/preSat Signal	0
..../preSat Signal/Forward_Path	0

..../PS-Simulink Converter1/EVAL_KEY	0
..../Simulink-PS Converter/EVAL_KEY	0
SelfBalancingEV_V2/MODES	0
SelfBalancingEV_V2/MODES/Bike ON//OFF	0
SelfBalancingEV_V2/MODES/ECO_MODE	0
SelfBalancingEV_V2/MODES/SPORTS_MODE	0
SelfBalancingEV_V2/MODES/Self_Balance	0
SelfBalancingEV_V2/MODES/URBAN_MODE	0
SelfBalancingEV_V2/MODES/WRONGB_INPUT	0
..../Acceleration Limit Tester	0
SelfBalancingEV_V2/Correction Generator	0
....-/PID Controller/Reset Signal	0
....-/PID Controller/Reset Signal/Disabled	0
....-/PID Controller/Tracking Mode Sum	0
..../Tracking Mode Sum/Passthrough	0
..../Ideal P Gain Fdbk/Disabled	0
....-/PID Controller/Saturation Fdbk/Disabled	0
....-/PID Controller/Sum Fdbk	0
....-/PID Controller/Sum Fdbk/Disabled	0
....-/PID Controller/N Copy/Disabled	0
..../Correction Generator/PID Controller/Sum	0
....-/PID Controller/Sum/Sum_PID	0
....-/PID Controller/Tsamp - Integral	0
....-/PID Controller/Tsamp - Ngain	0
....-/PID Controller/Tsamp - Ngain/Passthrough	0
..../Tsample - Integral/Passthrough	0
....-/PID Controller/Anti-windup	0

..../PID Controller/Anti-windup/Passthrough	0
..../PID Controller/D Gain	0
..../D Gain/Internal Parameters	0
..../PID Controller/Filter	0
..../PID Controller/Filter/Cont. Filter	0
..../PID Controller/Filter ICs	0
..../Filter ICs/Internal IC - Filter	0
..../PID Controller/I Gain	0
..../I Gain/Internal Parameters	0
..../PID Controller/Ideal P Gain	0
..../PID Controller/Ideal P Gain/Passthrough	0
..../PID Controller/Ideal P Gain Fdbk	0
..../PID Controller/Integrator	0
..../PID Controller/Integrator/Continuous	0
..../PID Controller/Integrator ICs	0
..../Integrator ICs/Internal IC	0
..../PID Controller/N Copy	0
..../PID Controller/N Gain	0
..../N Gain/Internal Parameters	0
..../PID Controller/P Copy	0
..../PID Controller/P Copy/Disabled	0
..../PID Controller/Parallel P Gain	0
..../Parallel P Gain/Internal Parameters	0
..../PID Controller/Saturation	0
..../PID Controller/Saturation/Passthrough	0
..../PID Controller/Saturation Fdbk	0
..../PID Controller/Tracking Mode	0

..../PID Controller/Tracking Mode/Disabled	0
..../PID Controller/postSat Signal	0
..../postSat Signal/Forward_Path	0
..../PID Controller/preSat Signal	0
..../preSat Signal/Forward_Path	0
..../Simulink-PS Converter1/EVAL_KEY	0
SelfBalancingEV_V2/System Switch	0
..../Momentum Calculation Block	0
..../PS-Simulink Converter1/EVAL_KEY	0
..../Physical Block/cart/left wheel	0
..../Physical Block/cart/right wheel	0
..../Physical Block/chassis/pillars	0
..../Two Wheeled Bike/World Frame	0

Λ Less

📁 Modeling Standards for MAB  0  26  33  0  84  0

📁 Naming Conventions  0  3  6  0  11  0

📁 General  0  0  2  0  2  0

⚠ Check file names

Characters allowed for file names

Warning

The following files have invalid names:

- C:\Users\DELL\Desktop\01FE18BAR001 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR011 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR024-Progress Report Feb 2022.docx
- C:\Users\DELL\Desktop\ABS BLACK BOX.docx
- C:\Users\DELL\Desktop\ABS SWOT ANALYSIS.docx
- C:\Users\DELL\Desktop\ABS blockdiagram.drawio
- C:\Users\DELL\Desktop\ABS flowchart.drawio
- C:\Users\DELL\Desktop\ABS flowchart.svg
- C:\Users\DELL\Desktop\ABS_v1.pdf.log
- C:\Users\DELL\Desktop\Car wiper system.prj
- C:\Users\DELL\Desktop\LAUNCHER - Shortcut (2).lnk
- C:\Users\DELL\Desktop\Launcher - Shortcut.lnk
- C:\Users\DELL\Desktop\Microsoft Teams.lnk
- C:\Users\DELL\Desktop\Microsoft Visual Studio 2010.lnk
- C:\Users\DELL\Desktop\Omkar - Chrome.lnk
- C:\Users\DELL\Desktop\PC Health Check.lnk
- C:\Users\DELL\Desktop\Personal - Edge.lnk
- C:\Users\DELL\Desktop\Proteus 8 Professional.lnk
- C:\Users\DELL\Desktop\RoboAnalyzer - Shortcut.lnk
- C:\Users\DELL\Desktop\SelfBalancingEV_V2.slx.autosave
- C:\Users\DELL\Desktop\Simulink onramp.pdf
- C:\Users\DELL\Desktop\Visual Studio Code.lnk
- C:\Users\DELL\Desktop\Youngblood_x64vk - Shortcut.lnk
- C:\Users\DELL\Desktop\eagle - Shortcut.lnk
- C:\Users\DELL\Desktop\energia - Shortcut.lnk
- C:\Users\DELL\Desktop\matlab - Shortcut.lnk
- C:\Users\DELL\Desktop\simulide - Shortcut.lnk

Λ Less

Recommended Action

Consider having only alphanumeric characters and underscores in file name.

Number at the beginning

Warning

The following files have numbers at the beginning of the file name:

- C:\Users\DELL\Desktop\01FE18BAR001 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR011 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR024-Progress Report Feb 2022.docx
- C:\Users\DELL\Desktop\11111111111.xlsx

Recommended Action

Consider having alphabetic character at the beginning of the file name.

reserved MATLAB word

Single

Warning

The following files have Reserved MATLAB words as the file name:

- C:\Users\DELL\Desktop\ABS.docx

- C:\Users\DELL\Desktop\Report.html

Recommended Action

Consider not having Reserved MATLAB word as the file name.



Characters allowed for folder names

Warning

The following folders have invalid names:

- C:\Users\DELL\Desktop\.metadata
- C:\Users\DELL\Desktop\SBEV-V2
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f
- C:\Users\DELL\Desktop\modelling 2021b
- C:\Users\DELL\Desktop\.metadata\.plugins
- C:\Users\DELL\Desktop\.metadata\.plugins\com.st.stm32cube.ide.mcu.informationcenter
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.flatpak.launcher
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.make.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.make.ui
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.managedbuilder.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.ui
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.runtime
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.debug.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.debug.ui
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.e4.workbench

- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.ui.refactoring
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.editors
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.ide
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.intro
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.workbench
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.projects
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.root
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.safetable
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.projects\test\.indexes
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.root\.indexes
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.runtime\.settings
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings
-
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings\.works pace
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\base-cygwin
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\base-files
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\ca-certificates
-
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\crypto-policies
-
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\guile 2.2
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\ipc-utils

- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\man-db
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\p11-kit
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\util-linux
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\w32api-headers
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\w32api-runtime
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\windows-default-manifest
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\cygwin\cygwin-devel
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\db\libdb5.3
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\gcc\gcc-core
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\gcc\libstdc++6
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\guile-2.2\libguile2.2_1
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\ncurses\terminfo-extra
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\openssl\libssl1.1

- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\p11-kit\libp11-kit0
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\p11-kit\p11-kit-trust
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\popt\libpopt-common
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\vim\vim-minimal
- C:\Users\DELL\Desktop\modelling 2021b\modelling evolution system
- C:\Users\DELL\Desktop\resources\project\BJY4x-kaKaw1qa3TDQljsz4GiTQ
- C:\Users\DELL\Desktop\resources\project\EEtUIUb-dLAdf0KpMVivaUlztwA
- C:\Users\DELL\Desktop\resources\project\fjRQtWiSly7hIij-Kmk87M7s21k
- C:\Users\DELL\Desktop\resources\project\rYiX-ReOw6h3ti9I7XtgLX04QKU

^ Less

Recommended Action

Consider having only alphanumeric characters and underscores in folder name.

reserved MATLAB word

Single

Warning

The following folders have reserved MATLAB words as the folder name:

- C:\Users\DELL\Desktop\ABS
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\db
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\gzip

- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\perl
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\run
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\tar
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\which
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\texinfo\info

Recommended Action

Consider not having reserved MATLAB word as the folder name.

Number at the beginning

Warning

The following folders have numbers at the beginning of the folder name:

- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\1
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\19
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\44
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\4f
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\94
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.refactoring\.refactorings\.workspace\2022
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings\.workspace\2022\3
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings\.workspace\2022\3\11

Recommended Action

Consider having alphabetic character at the beginning of the folder name.

Underscore at the beginning

Warning

The following folders have underscores at the beginning of the folder name:

- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release_autorebase

Recommended Action

Consider having alphabetic character at the beginning of the folder name.

-
- ✓ Check length of model file name
Check length of model file name

Passed

Model name is valid.

-
- ✓ Check length of folder name at every level of model path
The model file name is: SelfBalancingEV_V2

Passed

Folder names are valid.

 Check subsystem names

Single reserved MATLAB word

Warning

The following subsystems have reserved MATLAB words as the subsystem name:

- SelfBalancingEV_V2/MODES

Recommended Action

Consider not having reserved MATLAB word as the subsystem name.

 Check port block names

Characters allowed for port block names

Warning

The following port blocks have invalid names:

- SelfBalancingEV_V2/ABS control System/Desired wheel slip
- SelfBalancingEV_V2/ABS control System/Stopping Distance
- SelfBalancingEV_V2/ABS control System/relative slip calculator/wheel speed
-
- SelfBalancingEV_V2/Thermal Management/Maximum temp
- SelfBalancingEV_V2/Accelration Limit Tester/Switch System
-

- SelfBalancingEV_V2/System Switch/System Switch
-
-
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
-
- SelfBalancingEV_V2/Correction Generator/Deviation Angle
- SelfBalancingEV_V2/ABS control System/Wheel Speed
-
- SelfBalancingEV_V2/ABS control System/Wheel Slip
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/tyre torque
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/wheel speed
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF
- SelfBalancingEV_V2/ABS control System/Vehicle Speed

Λ Less

Recommended Action

Consider having only alphanumeric characters and underscores in port block name.

Reserved MATLAB word

Single

Warning

The following port blocks have reserved MATLAB words as the port block name:

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/error
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback
- SelfBalancingEV_V2/Correction Generator/Feedback
-

Recommended Action

Consider not having reserved MATLAB word as the port block name.



Check character usage in block names

Characters allowed for block names

Warning

The following blocks have invalid names:

- SelfBalancingEV_V2/ABS control System/normal force
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/stopping distance
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame
- SelfBalancingEV_V2/Switch_Mode(0-4)
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2
- SelfBalancingEV_V2/vehicle speed
-
- SelfBalancingEV_V2/Diplay for voltage status

- SelfBalancingEV_V2/wheel speed
-
-
-
- SelfBalancingEV_V2/Display for State of charge
- SelfBalancingEV_V2/Display for current
- SelfBalancingEV_V2/System Switch/System Status ON//OFF
- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/Voltage graph
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4
- SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
- SelfBalancingEV_V2/Graph of maintained temperature
- SelfBalancingEV_V2/Subsystem/Right Indicator
-
- SelfBalancingEV_V2/ABS control System/mu-slip lookup table
-
- SelfBalancingEV_V2/wheel speed on braking
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1
-
-
- SelfBalancingEV_V2/Input Acceleration
- SelfBalancingEV_V2/ABS control System/angular vehicle speed
- SelfBalancingEV_V2/vehicle speed on braking
- SelfBalancingEV_V2/Output Angle of deviotaion
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2

- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3
-
- SelfBalancingEV_V2/ON//OFF
-
- SelfBalancingEV_V2/Charge percentage
- SelfBalancingEV_V2/distance between point of braking and stopping
- SelfBalancingEV_V2/Wheel slip
-
-
- SelfBalancingEV_V2/Correction Generator/rad 2 deg
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3
-
- SelfBalancingEV_V2/Subsystem/High Speed
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2
-
- SelfBalancingEV_V2/ABS control System/wheel radius
- SelfBalancingEV_V2/Current graph
- SelfBalancingEV_V2/ABS control System/stopping distance

Λ Less

Recommended Action

Consider having only alphanumeric characters and underscores in block name.

reserved MATLAB word

Single

Warning

The following blocks have reserved MATLAB words as the block name:

- SelfBalancingEV_V2/Accelration Limit Tester/const
- SelfBalancingEV_V2/MODES/WRONG_INPUT/NULL

Recommended Action

Consider not having reserved MATLAB word as the block name.

 Check length of subsystem names

Passed

 Check length of block names

Passed

 Check length of Import and Outport names

Passed

 Check character usage in signal names and bus names

Single reserved MATLAB word

Warning

The following signals or buses have reserved MATLAB words as the name:

- SelfBalancingEV_V2/ABS control System/error
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Correction Generator/Feedback

- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback

Recommended Action

Consider not having reserved MATLAB word as the signal or bus names.

Characters allowed for signal names and bus names

Warning

The following signals or buses have invalid names:

- SelfBalancingEV_V2/ABS control System/Vehicle Speed
- SelfBalancingEV_V2/ABS control System/relative slip calculator/actual relative slip
- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/wheel speed
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/out(+1/-1)
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking torque
- SelfBalancingEV_V2/Input Signal
- SelfBalancingEV_V2/Input Value
- SelfBalancingEV_V2/Maximum temp
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Output Value
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Correction Generator/Initaial Deviation
- SelfBalancingEV_V2/Angle of deviation

- SelfBalancingEV_V2/Accelration Input

Λ Less

Recommended Action

Consider having only alphanumeric characters and underscores in signal names and bus names.

-  Check character usage in parameter names

Error occurred during model compile.

-  Check length of signal and bus names
Check length of signal and bus names

Passed

All signal and bus names are valid.

-  Check length of parameter names
Error occurred during model compile.
-

-  Check character usage in Stateflow data names
Identify Stateflow data names with invalid characters.

Passed

No invalid characters are used in Stateflow data names.

-  Check length of Stateflow data name
Check if the length of Stateflow data names are within limit.

Passed

All Stateflow data names are valid.

- Check duplication of Simulink Data names

Simulink Data names should be unique across base workspace, model workspace and data dictionary.

Passed

All Simulink Data names are unique.

- Check unused data in Simulink Model

Error occurred during model compile.

- Check for unused data in Stateflow Charts

Checks if the model parameter 'Unused data, events, messages and functions' is not set to 'none'.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Unused data, events, messages and functions (SFUnusedDataAndEventsDiag)	warning	error, warning

- Check usage of restricted variable names

Identify usage of reserved keywords in MATLAB Function blocks.

Passed

No variable names conflict with reserved keywords



 Check Implement logic signals as Boolean data (vs. double)

Identify whether **Implement logic signals as Boolean data (vs. double)** is selected.

Passed

Implement logic signals as Boolean data (vs. double) is selected.

 Check Signed Integer Division Rounding mode

jc_0642: Integer rounding mode setting

Identifies blocks with block parameter 'Integer Rounding Mode' set to 'Simplest' when the configuration parameter 'Signed integer division rounds to' is set to 'Undefined'.

Passed

Configuration parameter 'Signed integer division rounds to' is not set to 'Undefined'.

 Check diagnostic settings for incorrect calculation results

Identify data validity diagnostic settings which detect incorrect calculation results.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error

Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
---------	---	---------	-------

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

Check model diagnostic parameters

Identify diagnostic parameters that are set to none.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error, warning
Warning	Duplicate data store names (UniqueDataStoreMsg)	none	error, warning
Warning	Unconnected block input ports (UnconnectedInputMsg)	none	error, warning
Warning	Unconnected block output ports (UnconnectedOutputMsg)	none	error, warning
Warning	Unconnected line (UnconnectedLineMsg)	none	error, warning

Recommended Action

Follow the links in the result table to modify the model configuration parameters.

 Diagram Appearance  0  1  12  0  4  0

 Check for Simulink diagrams using nonstandard display attributes

Identify nonstandard display attributes in Simulink diagrams.

Check format settings

Identify incorrect model-level format options.

Warning

The following format display options are incorrect.

Display Attribute	Recommended Value	Actual Value
Debug > Information Overlays > Nonscalar Signals	on	off
Modeling > Environment > Model Browser	off	on
Debug > Information Overlays > Show All Links	none	disabled

Recommended Action

Set the format options to the recommended value.

Check block colors

Identify blocks using nonstandard colors.

Passed

All blocks use standard colors.

Check canvas colors

Identify canvases that are not white.

Passed

All diagrams use a white canvas.

Check diagram zoom

Identify diagrams that do not have zoom factor set to 100 %.

Note: Zoom factors can differ for each instance of a model diagram opened in Simulink Editor

Warning

The following diagrams do not have zoom factor set to 100 percent:

- SelfBalancingEV_V2
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller"
title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller"
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Correction Generator/PID Controller

- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system"
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management/PID Controller
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

For each listed diagram, select **Modeling > Environment > Zoom > Normal View (100%)**.

 Check Model font settings

Check font size in Simulink block and signal names

Warning

The font size of the following Simulink block or signal names are different from input parameters:

- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

Recommended Action

Consider modifying font size of block and signal names as per input parameters.



Check whether block names appear below blocks

Incorrect block name position

Warning

The following blocks have names that do not display below the blocks:

-
- SelfBalancingEV_V2/Correction Generator/rad 2 deg
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Divide
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3
- SelfBalancingEV_V2/Goto
- SelfBalancingEV_V2/Correction Generator/initial disturbance
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
-
- SelfBalancingEV_V2/Input Acceleration
-

- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2
- SelfBalancingEV_V2/Correction Generator/Feedback
-
- SelfBalancingEV_V2/Accelaration Limit Tester/Switch1
- SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
- SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Sum1
- SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1

Λ Less

Recommended Action

Change the location such that the block name is below the block.

 Check the display attributes of block names

Identify whether to display block names.

Check for blocks with hidden names and obvious function

Identify block names that are displayed but can be hidden due to obvious behavior.

Warning

The following block names can be hidden:

- SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode

- SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode
- SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance
- SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode
- SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input
- SelfBalancingEV_V2/System Switch/System Status ON//OFF

Recommended Action

Hide the block name by selecting (**Format > Auto Name > Hide Automatic Block Name**).

Check

for non-descriptive displayed block names

Identify block names that are displayed but should be hidden due to a lack of a descriptive name.

Warning

The following blocks have a name displayed, however, the name is not descriptive:

- SelfBalancingEV_V2/Thermal Management/output
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/output

Recommended Action

Modify the block name to provide descriptive information, or hide the block name by selecting (**Format > Auto Name > Hide Automatic Block Name**).

Check

for missing block names

Identify block names that are hidden but should be displayed to show a descriptive name.

Warning

The following blocks have descriptive names, however, the names are hidden:

- SelfBalancingEV_V2/ABS control System/Relative Slip
- SelfBalancingEV_V2/Lamp
- SelfBalancingEV_V2/Lamp1
- SelfBalancingEV_V2/Side Lights

Recommended Action

Modify the blocks to show the block name by deselecting (**Format > Auto Name > Hide Automatic Block Name**).

Check for nondefault block attributes

Identify blocks that use and fail to display nondefault values.

Warning

The following blocks use and fail to display nondefault values:

Block	Parameter	Expected Value	Actual Value
SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	InitialCondition	0	100

SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	LimitOutput	off	on
SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	UpperSaturationLimit	inf	1000
SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	LowerSaturationLimit	-inf	0
SelfBalancingEV_V2/ABS control System/mu-slip lookup table" title="SelfBalancingEV_V2/ABS control System/mu-slip lookup table	RndMeth	Floor	Simplest
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	InitialCondition	0	100/2
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	LimitOutput	off	on
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	UpperSaturationLimit	inf	1000
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	LowerSaturationLimit	-inf	0
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion	RndMeth	Floor	Zero
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion1" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion1	RndMeth	Floor	Zero

SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure	LimitOutput	off	on
SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure	UpperSaturationLimit	inf	1000
SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure	LowerSaturationLimit	-inf	0
SelfBalancingEV_V2/Acceleration Limit Tester/Switch1" title="SelfBalancingEV_V2/Acceleration Limit Tester/Switch1	Threshold	0	4
SelfBalancingEV_V2/Saturation	UpperLimit	0.5	1
SelfBalancingEV_V2/Saturation	LowerLimit	-0.5	0
SelfBalancingEV_V2/Subsystem/Saturation	UpperLimit	0.5	20
SelfBalancingEV_V2/Subsystem/Saturation	LowerLimit	-0.5	0

Λ Less

Recommended Action

For the above blocks, display the nondefault value using the Block Annotation pane of the Block Properties dialog box.

⚠ Check Model Description

Identify layers in the model having inconsistent description format.

Warning

Following layers do not have model descriptions:

- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

Consider adding model description for all the layers.

Identify
layers in the model having inconsistent description format.

Warning

Following layers do not have consistent model description format:

- SelfBalancingEV_V2
- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block

Λ Less

Recommended Action

Consider having a consistent format for the model description

Example: If description tags are 'Input:', 'Description:', and 'Output:' then format should be as following:

Input: add input information here

Description: add model description here

Output: add output information here

 Check if blocks are shaded in the model

Check if blocks are shaded in the model

Passed

Blocks in the model are not shaded.

 Check for unconnected signal lines and blocks

Check for unconnected subsystems and basic blocks

Warning

The following blocks in the model are not connected:

- SelfBalancingEV_V2/MODES/WRONC_INPUT/Switch5

Recommended Action

Connect the blocks to the correct source or destination block.

If the destination block is not known, use a Terminator or Ground block to terminate the line.

for unconnected signal lines

Check

Warning

The following signal lines in the model are not connected:

- SelfBalancingEV_V2/Thermal Management

- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis

- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

Connect the signal lines to the correct source or destination block.

If the destination block is not known, use a Terminator or Ground block to terminate the line.

 [Check signal line connections](#)
[Check signal intersections](#)

Warning

The following signals intersect with other signals in the diagram:

- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars

Recommended Action

Reposition the above listed signals to avoid intersections.

Check

if signals are drawn as slanting lines

Warning

The following signals are drawn as slanting lines in the diagram:

- SelfBalancingEV_V2/Correction Generator/Initaial Deviation
- SelfBalancingEV_V2/Correction Generator

Recommended Action

Consider redrawing the above listed signals as vertical or horizontal lines.

Check

if signal lines are split into multiple sublines

Warning

The following signal lines are split into multiple sublines:

- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis

Recommended Action

Reposition the signals listed above to avoid splitting of signal lines.

Check

signal overlaps

Warning

The following signals overlap with other signals in the diagram:

- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

Reposition the above listed signals to avoid signal overlaps.

 Check signal flow in model

Check placement of sequential blocks

Warning

The placement of blocks in the following subsystems can be improved:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
-
-
-
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2

Λ Less

Recommended Action

Ensure that the signal flow in the mentioned subsystems is from left to right.

- All sequential blocks, except the blocks on feedback path, must be placed from left to right.
- All blocks, except the blocks on feedback path, should be oriented to the right.

 Check usage of tunable parameters in blocks

Identify tunable parameters used to specify expressions, data type conversions, or indexing operations.

Passed

Tunable parameters are not used in the model.

 Check connections between structural subsystems

Error occurred during model compile.

 Check for consistency in model element names

Check if model elements connected to a signal are following consistent naming

Warning

The following model elements are not consistent with the connected signal name:

Block Path	Expression
------------	------------

	Naming mismatch with signal name "Vehicle Speed"
	Naming mismatch with signal name "Wheel Speed"
	Naming mismatch with signal name "Wheel Speed"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "SOC (%)"
	Naming mismatch with signal name "Current (A)"
	Naming mismatch with signal name "Voltage (V)"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Acceleration Input"
	Naming mismatch with signal name "Angle of deviation"
SelfBalancingEV_V2/Goto	Naming mismatch with signal name "Angle of deviation"
SelfBalancingEV_V2/From	Naming mismatch with signal name "Angle of deviation"
SelfBalancingEV_V2/Input signal/Signal 1	Naming mismatch with signal name "input_signal"
SelfBalancingEV_V2/Subsystem/u	Naming mismatch with signal name "Input Signal"
SelfBalancingEV_V2/Subsystem/Out1	Naming mismatch with signal name "Output signal"

Λ Less

Recommended Action

Consider renaming the deviating model elements to match the signal name or to be consistent with Inport/Outport blocks.

 Check trigger signal names

Identify trigger blocks where the origin of the trigger signal and the destination have dissimilar names.

Passed

No violation of the guideline for use of trigger signal names.

 Check for mixing basic blocks and subsystems

Identify levels in the model that include basic blocks and subsystems. Each level of a model must be designed with blocks of the same level (for example, only subsystems or only basic blocks).

Warning

The following level(s) in the model include basic blocks and subsystems:

System	Block path
SelfBalancingEV_V2	SelfBalancingEV_V2/Charge percentage
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant1
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant2
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant3
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant4
SelfBalancingEV_V2	SelfBalancingEV_V2/Current graph
SelfBalancingEV_V2	SelfBalancingEV_V2/Display for voltage status" title="SelfBalancingEV_V2/Display for voltage status"
SelfBalancingEV_V2	SelfBalancingEV_V2/Display
SelfBalancingEV_V2	SelfBalancingEV_V2/Display for State of charge" title="SelfBalancingEV_V2/Display for State of charge"
SelfBalancingEV_V2	SelfBalancingEV_V2/Display for current

SelfBalancingEV_V2	SelfBalancingEV_V2/Display1
SelfBalancingEV_V2	SelfBalancingEV_V2/Graph of maintained temperature" title="SelfBalancingEV_V2/Graph of maintained temperature
SelfBalancingEV_V2	SelfBalancingEV_V2/Input Acceleration
SelfBalancingEV_V2	SelfBalancingEV_V2/Lamp
SelfBalancingEV_V2	SelfBalancingEV_V2/Lamp1
SelfBalancingEV_V2	SelfBalancingEV_V2/ON//OFF
SelfBalancingEV_V2	SelfBalancingEV_V2/Output Angle of deviotaion " title="SelfBalancingEV_V2/Output Angle of deviotaion
SelfBalancingEV_V2	SelfBalancingEV_V2/Saturation
SelfBalancingEV_V2	SelfBalancingEV_V2/Self_Balance_Mode
SelfBalancingEV_V2	SelfBalancingEV_V2/Side Lights
SelfBalancingEV_V2	SelfBalancingEV_V2/Speed_Modes
SelfBalancingEV_V2	SelfBalancingEV_V2/Switch
SelfBalancingEV_V2	SelfBalancingEV_V2/Switch_Mode(0-4)
SelfBalancingEV_V2	SelfBalancingEV_V2/Voltage graph
SelfBalancingEV_V2	SelfBalancingEV_V2/Wheel slip
SelfBalancingEV_V2	SelfBalancingEV_V2/distance between point of braking and stopping" title="SelfBalancingEV_V2/distance between point of braking and stopping
SelfBalancingEV_V2	SelfBalancingEV_V2/stopping distance
SelfBalancingEV_V2	SelfBalancingEV_V2/vehicle speed
SelfBalancingEV_V2	SelfBalancingEV_V2/vehicle speed on braking" title="SelfBalancingEV_V2/vehicle speed on braking
SelfBalancingEV_V2	SelfBalancingEV_V2/wheel speed
SelfBalancingEV_V2	SelfBalancingEV_V2/wheel speed on braking" title="SelfBalancingEV_V2/wheel speed on braking
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Gain" title="SelfBalancingEV_V2/ABS control System/Gain

SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Relative Slip" title="SelfBalancingEV_V2/ABS control System/Relative Slip"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Stop Simulation" title="SelfBalancingEV_V2/ABS control System/Stop Simulation"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Sum" title="SelfBalancingEV_V2/ABS control System/Sum"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/angular vehicle speed" title="SelfBalancingEV_V2/ABS control System/angular vehicle speed"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/mu-slip lookup table" title="SelfBalancingEV_V2/ABS control System/mu-slip lookup table"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/normal force" title="SelfBalancingEV_V2/ABS control System/normal force"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/stopping distance" title="SelfBalancingEV_V2/ABS control System/stopping distance"
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/wheel radius" title="SelfBalancingEV_V2/ABS control System/wheel radius"
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/Gain" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Gain"
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited"
SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1"

title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure"
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/force and torque" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/force and torque"
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system"	SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1"
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system"	SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery"
SelfBalancingEV_V2/Two Wheeled Bike	SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2" title="SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2"
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block"	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn1"
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block"	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn2" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn2"
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart"	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1"

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Conn1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Conn1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/Conn1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/Conn1

Λ Less

Recommended Action

If possible, replace blocks at the identified level of the model hierarchy with basic blocks. Move nonvirtual blocks into the identified subsystem.

- ✓ Check for avoiding algebraic loops between subsystems
jc_0653: Delay block layout in feedback loops

Identify delay blocks usage in feedback loops.

Passed

No delay blocks in feedback loops violate the guidelines for avoiding algebraic loops between subsystems.

- ⚠ Check for prohibited sink blocks
Prohibited sink blocks

Warning

The following discrete controllers contain sink blocks:

- SelfBalancingEV_V2/ABS control System/Stop Simulation

Recommended Action

Remove the prohibited blocks from the subsystem.



-
- ✗ Check usage of vector and bus signals

Error occurred during model compile.

 Check definition of signal labels

Identify blocks that require labeled signals. A subset of source and destination blocks require labeled signals.

Check source block labels

Warning

The following signals have no label:

- SelfBalancingEV_V2/ABS control System/Desired wheel slip/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/wheel speed/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/vehicle speed/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/error/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/tyre torque/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/error/
- SelfBalancingEV_V2/MODES/Swithc_Mode/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/u/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/In2/
- SelfBalancingEV_V2/MODES/ECO_MODE/u/
- SelfBalancingEV_V2/MODES/ECO_MODE/In2/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/u/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/In2/
- SelfBalancingEV_V2/MODES/Self_Balance/u/
- SelfBalancingEV_V2/MODES/URBAN_MODE/u/
- SelfBalancingEV_V2/MODES/URBAN_MODE/In2/

- SelfBalancingEV_V2/MODES/WRONG_INPUT/u/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/input_signal/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/ln1/
- SelfBalancingEV_V2/Subsystem/u/
- SelfBalancingEV_V2/System Switch/System Switch/
- SelfBalancingEV_V2/Thermal Management/Maximum temp/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/Self_Balance/
- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/

- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/Thermal Management/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Constant/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Constant/
- SelfBalancingEV_V2/Accelration Limit Tester/const/
- SelfBalancingEV_V2/Constant2/
- SelfBalancingEV_V2/Constant3/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Off_speed/
- SelfBalancingEV_V2/MODES/ECO_MODE/Eco_mode/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/Sports_mode/
- SelfBalancingEV_V2/MODES/Self_Balance/OFF/
- SelfBalancingEV_V2/MODES/Self_Balance/ON/
- SelfBalancingEV_V2/MODES/URBAN_MODE/Urban_mode/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/NULL/
- SelfBalancingEV_V2/ON//OFF/
- SelfBalancingEV_V2/Subsystem/Constant/
- SelfBalancingEV_V2/Subsystem/High Speed/
- SelfBalancingEV_V2/Subsystem/Right Indicator/
- SelfBalancingEV_V2/Switch_Mode(0-4)/
- SelfBalancingEV_V2/System Switch/Constant/
- SelfBalancingEV_V2/System Switch/Constant1/

Λ Less

Recommended Action

Add a new or propagated label to the signal line.

blocks that require labeled signals. A subset of source and destination blocks require labeled signals.

Check destination block labels

Warning

The following signals have no label:

- SelfBalancingEV_V2/ABS control System/Wheel Slip/
- SelfBalancingEV_V2/ABS control System/Stopping Distance/
- SelfBalancingEV_V2/Correction Generator/Deviation Angle/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Out1/
- SelfBalancingEV_V2/MODES/ECO_MODE/Out1/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/Out1/
- SelfBalancingEV_V2/MODES/Self_Balance/Out1/
- SelfBalancingEV_V2/MODES/URBAN_MODE/Out1/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/Out1/
- SelfBalancingEV_V2/MODES/Speed_range/
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<SOC (%)>/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<Current (A)>/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<Voltage (V)>/
- SelfBalancingEV_V2/Subsystem/Out1/
- SelfBalancingEV_V2/Thermal Management/output/
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/output/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/Self_Balance/
- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/

Λ Less

Recommended Action

Add a new or propagated label to the signal line.



Check Signal name propagation

Check Signal name propagation for subsystems

Warning

The following subsystems do not have propagated signal labels:

- SelfBalancingEV_V2
- SelfBalancingEV_V2

- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES

- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2
- SelfBalancingEV_V2/Thermal Management

Λ Less

Recommended Action

Add labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

Check

Signal name propagation for subsystems

Warning

The following subsystems do not display propagated signals but have signal names:

- SelfBalancingEV_V2/ABS control System/Wheel Speed

- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/input_signal
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback

Recommended Action

Remove labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

Check

Signal name propagation for connection blocks

Warning

The following connection blocks do not display propagated signals but have signal names:

- SelfBalancingEV_V2/Angle of deviation

Recommended Action

Remove labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

 Check position of signal labels

Check position of signal labels

Warning

The following signals have labels placed at the top of signal line:

- SelfBalancingEV_V2/ABS control System/relative slip calculator/actual relative slip
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<Voltage (V)>
- SelfBalancingEV_V2/Angle of deviation

Recommended Action

Consider placing the labels underneath the signal lines.

Check

location of signal labels

Warning

The following signals do not have labels located at the origin of the signal line:

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/out(+1/-1)
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking torque
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/wheel speed
- SelfBalancingEV_V2/ABS control System/Vehicle Speed
- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input

- SelfBalancingEV_V2/Correction Generator/Initaial Deviation
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<SOC (%)>
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<Current (A)>
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<Voltage (V)>
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Input
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/input_signal
- SelfBalancingEV_V2/Maximum temp
- SelfBalancingEV_V2/Input Signal
- SelfBalancingEV_V2/Output Value
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Input Value

Λ Less

Recommended Action

Consider placing the labels at the origin of the signal line.

overlap of signal labels

Check

Warning

The following signals have labels which overlap other objects:

- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Input
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/input_signal
- SelfBalancingEV_V2/Maximum temp
- SelfBalancingEV_V2/Input Signal
- SelfBalancingEV_V2/Output Value
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Input Value

Λ Less

Recommended Action

Consider placing the signal label so that it is readable.

⚠ Check signal line labels

Identify blocks that require labeled signals. A subset of source and destination blocks require labeled signals.

Check source block labels

Warning

The following signals have no label:

- SelfBalancingEV_V2/ABS control System/Desired wheel slip/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/wheel speed/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/vehicle speed/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/error/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/tyre torque/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/error/
- SelfBalancingEV_V2/MODES/Swithc_Mode/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/u/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/ln2/
- SelfBalancingEV_V2/MODES/ECO_MODE/u/
- SelfBalancingEV_V2/MODES/ECO_MODE/ln2/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/u/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/ln2/
- SelfBalancingEV_V2/MODES/Self_Balance/u/
- SelfBalancingEV_V2/MODES/URBAN_MODE/u/
- SelfBalancingEV_V2/MODES/URBAN_MODE/ln2/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/u/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/input_signal/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/ln1/
- SelfBalancingEV_V2/Subsystem/u/
- SelfBalancingEV_V2/System Switch/System Switch/
- SelfBalancingEV_V2/Thermal Management/Maximum temp/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/

- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/Self_Balance/
- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/Thermal Management/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Constant/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Constant/
- SelfBalancingEV_V2/Accelration Limit Tester/const/
- SelfBalancingEV_V2/Constant2/
- SelfBalancingEV_V2/Constant3/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Off_speed/
- SelfBalancingEV_V2/MODES/ECO_MODE/Eco_mode/

- SelfBalancingEV_V2/MODES/SPORTS_MODE/Sports_mode/
- SelfBalancingEV_V2/MODES/Self_Balance/OFF/
- SelfBalancingEV_V2/MODES/Self_Balance/ON/
- SelfBalancingEV_V2/MODES/URBAN_MODE/Urban_mode/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/NULL/
- SelfBalancingEV_V2/ON//OFF/
- SelfBalancingEV_V2/Subsystem/Constant/
- SelfBalancingEV_V2/Subsystem/High Speed/
- SelfBalancingEV_V2/Subsystem/Right Indicator/
- SelfBalancingEV_V2/Switch_Mode(0-4)/
- SelfBalancingEV_V2/System Switch/Constant/
- SelfBalancingEV_V2/System Switch/Constant1/

Λ Less

Recommended Action

Add a new or propagated label to the signal line.

Identify
blocks that require labeled signals. A subset of source and destination blocks require labeled signals.

Check destination block labels

Warning

The following signals have no label:

- SelfBalancingEV_V2/ABS control System/Wheel Slip/

- SelfBalancingEV_V2/ABS control System/Stopping Distance/
- SelfBalancingEV_V2/Correction Generator/Deviation Angle/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Out1/
- SelfBalancingEV_V2/MODES/ECO_MODE/Out1/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/Out1/
- SelfBalancingEV_V2/MODES/Self_Balance/Out1/
- SelfBalancingEV_V2/MODES/URBAN_MODE/Out1/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/Out1/
- SelfBalancingEV_V2/MODES/Speed_range/
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<SOC (%)>/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<Current (A)>/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<Voltage (V)>/
- SelfBalancingEV_V2/Subsystem/Out1/
- SelfBalancingEV_V2/Thermal Management/output/
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/output/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/Self_Balance/
- SelfBalancingEV_V2/MODES/URBAN_MODE/

- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/

Λ Less

Recommended Action

Add a new or propagated label to the signal line.



Identify propagated labels on signal lines.

Warning

The following subsystem-level Import block signals should propagate signal labels from the parent system:

- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Correction Generator/Feedback

Recommended Action

Add labels to the input signals.

Identify
propagated labels on signal lines.

Warning

The following signal labels are not propagated. Propagate signals coming from Subsystem blocks.

- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/input_signal
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback

Recommended Action

Add labels to the output signals.



Check Indexing Mode

Identify blocks and charts with inconsistent Indexing mode.

Passed

No inconsistent Indexing mode used in the model.

Check block orientation

Check block orientation

Warning

The following blocks have rotated or reversed orientation:

- SelfBalancingEV_V2/ABS control System/Relative Slip
- SelfBalancingEV_V2/ABS control System/relative slip calculator

- SelfBalancingEV_V2/ABS control System/relative slip calculator/Divide
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Sum1
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1
- SelfBalancingEV_V2/Correction Generator/Sum
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Correction Generator/rad 2 deg
- SelfBalancingEV_V2/Correction Generator/Correction
- SelfBalancingEV_V2/Goto
-
-
-
- SelfBalancingEV_V2/Thermal Management/Controlled Temperature Source
- SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1
- SelfBalancingEV_V2/Thermal Management/Thermal Reference1
-
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2
-
-
-
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1

- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /Conn1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame/a
- SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2

Λ Less

Recommended Action

Flip/rotate the blocks to be oriented towards the right.

 Check if tunable block parameters are defined as named constants
Check if tunable block parameters are defined as named constants

Warning

The following tunable block parameters are not defined as named constants.

Block	Violations
	InitialCondition : 100

	UpperSaturationLimit : 1000
	Gain : 294.3
	Gain : 2
	UpperSaturationLimit : 1000
	UpperSaturationLimit : 1000
	Threshold : 4
SelfBalancingEV_V2/Constant	Value : 10
SelfBalancingEV_V2/Constant4	Value : 48
SelfBalancingEV_V2/Input Acceleration	Value : 2
	Value : 20
	Value : 90
	Value : 45
SelfBalancingEV_V2/Subsystem/High Speed	Value : 20
	Value : 10
SelfBalancingEV_V2/Subsystem/Saturation	UpperLimit : 20

Λ Less

Recommended Action

Consider changing tunable block parameter literal values to named constants.

⚠ Check for sample time setting

Check if sample time property of a block is set to -1 (inherited).

Warning

The following blocks do not have sample time set to -1 (inherited):

-

Recommended Action

Consider changing the sample time to -1 (inherited).

 Check usage of fixed-point data type with non-zero bias

Error occurred during model compile.

 Check type setting by data objects

Error occurred during model compile.

 Conditional Subsystem relations  0  1  1  0  3  0

 Check position of conditional blocks and iterator blocks

Block layout in conditional subsystem

Warning

The following conditional blocks are not located at the top of the subsystem diagram:

- SelfBalancingEV_V2/MODES/Enable

Recommended Action

Reposition the conditional blocks listed above to the top of the subsystem diagram.

-
- X Check undefined initial output for conditional subsystems
Error occurred during model compile.
-

- ✓ Check usage of Merge block
jc_0659: Usage restrictions of signal lines input to Merge blocks
There must not be any block between a Conditional Subsystem block and a Merge block.

Passed

No Merge block found.

- ✓ Check logical expressions in If blocks
Checks If blocks for complex usage of primary expressions within a logical expression

Passed

Logical expressions inside If blocks are simple

- ✓ Check default/else case in Switch Case blocks and If blocks
Check if default/else case in Switch Case blocks and If blocks are set to 'on'

Passed

Conditional Control blocks are valid.

 Operation Blocks - 0 X 6 ! 3 M 0 ✓ 6 ≡ 0

- X Check fundamental logical and numerical operations

Error occurred during model compile.

- ! Check usage of Sum blocks
Check shape of Sum block

Warning

Following Sum blocks are "round" shaped but are not part of a feedback loop:

- SelfBalancingEV_V2/ABS control System/relative slip calculator/Sum1
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1
-
- SelfBalancingEV_V2/Correction Generator/Sum
- SelfBalancingEV_V2/Thermal Management/Sum

Recommended Action

Set the shape of Sum block to "rectangular".

Check

first input of Sum block

Warning

Following Sum blocks don't have '+' sign as first input and are not part of a feedback loop:

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1
- SelfBalancingEV_V2/Thermal Management/Sum

Recommended Action

Set first input to Sum block to '+' sign.

 Check operator order of Product blocks

Passed

 Check signs of input signals in product blocks

Error occurred during model compile.

-
-  Check for parentheses in Fcn block expressions
Identify order of parentheses in Fcn block expressions.

Passed

All Fcn blocks use parentheses to mark operator precedence.

-  Check icon shape of Logical Operator blocks
Passed

-
-  Check usage of Relational Operator blocks
Identify Relational Operator blocks that connect to constants with the first (upper) input value.

Passed

All Relational Operator blocks with constant input values are configured correct.

-  Check comparison of floating point types in Simulink

Error occurred during model compile.

-  Check usage of Lookup Tables
Check Lookup method settings of n-D Lookup table blocks

Warning

The following n-D Lookup table blocks violate recommended Lookup method settings:

Block	Parameter	Current Value	Recommended Values
	ExtrapMethod	Linear	Clip
	UseLastTableValue	off	on

Recommended Action

Consider changing the above mentioned block parameters with the recommended values.

-  Check usage of Memory and Unit Delay blocks

Error occurred during model compile.

-  Check for cascaded Unit Delay blocks

Identify cascaded and tapped pattern of Unit Delay blocks.

Passed

No cascaded Unit Delay blocks found that can be changed to Tapped Delay/Delay block.

-  Check usage of Discrete-Time Integrator block

Check usage of recommended settings for Discrete-Time Integrator blocks to prevent unexpected results.

Passed

All Discrete-Time Integrator blocks have recommended settings.

-  Check usage of the Saturation blocks

Error occurred during model compile.

-  Check output data type of operation blocks

jc_0651: Implementing a type conversion

Identify operation blocks that specify output data type.

Warning

Following operation blocks explicitly specify output data type:

-
-
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero

Recommended Action

Instead of explicitly specifying output data type on operation blocks, use 'Data Type Conversion' block when changing the data type of the block output signal.

 Check for division by zero in Simulink

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Other blocks  0  4  1  0  5  0

 Check position of Import and Outport blocks

Check positions of Import blocks

Warning

The following Import blocks are not placed to the extreme left side of the diagram:

-
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Correction Generator/Feedback

- SelfBalancingEV_V2/MODES/Bike ON//OFF/In2
 - SelfBalancingEV_V2/MODES/ECO_MODE/In2
 - SelfBalancingEV_V2/MODES/SPORTS_MODE/In2
 - SelfBalancingEV_V2/MODES/URBAN_MODE/In2
 -

Recommended Action

Move the Import blocks identified to the left of all other blocks in the diagram.

It is acceptable to move the Import block to the right only to prevent signal crossings.

positions of Outport blocks

Check

Warning

The following Outport blocks are not placed to the extreme right side of the diagram:

- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/output

Λ Less

Recommended Action

Move the Outport blocks identified to the right of all other blocks in the diagram.

It is acceptable to move the Outport block to the left only to prevent signal crossings.

 Check display for port blocks

Passed

 Check scope of From and Goto blocks

Error occurred during model compile.

 Check for usage of Data Store Memory blocks

Identify the usage of Data Store Memory blocks.

Passed

Usage of Data Store Memory blocks is correct.

 Check usage of Switch blocks

Error occurred during model compile.

 Check input and output datatype for Switch blocks

Error occurred during model compile.

-  Check settings for data ports in Multiport Switch blocks

Error occurred during model compile.

-  Check for missing ports in Variant Subsystems

Check for number of inputs/outputs to a Variant Subsystem.

Passed

No Variant Subsystems found having different number of inputs/outputs in the Variant Subsystem choices.

-  Check use of default variants

na_0036: Default variant

Identify variant subsystems that do not use default variants.

Passed

All variant subsystems in the model use default variants

-  Check use of single variable variant conditionals

Identify variant subsystems which use multi-variable compound conditions.

Passed

No variant subsystems with multiple variable compound conditions found

 Stateflow  0  6  0  0  45  0

 Block/Data/Events  0  1  0  0  5  0

-  Check for names of Stateflow ports and associated signals

Error occurred during model compile.

-  Check execution timing for default transition path

'Execute (enter) Chart At Initialization' should be set to OFF.

Passed

All Stateflow Charts pass the check.

✓ Check definition of Stateflow data

Identify the Scope value set on Stateflow data defined at machine level.

Passed

All Stateflow data at machine level has been defined as per guideline.

✓ Check usable number for first index

Identify usage of first index of Stateflow data.

Passed

All Stateflow data first index values are uniform.

✓ Check scope of data in parallel states

jc_0722: Local data definition in parallel states

The scope of local variables should be restricted to one parallel state unless it is being used by other parallel states.

Passed

No Stateflow States were found.

✓ Check definition of Stateflow events

Stateflow events should be defined at the smallest possible scope of usage.

Passed

All Stateflow events are defined at their smallest scope.

 Diagram  0  0  0  0  14  0

✓ Check for unconnected objects in Stateflow Charts

Identify dangling transitions and unconnected Stateflow States and Junctions in Stateflow Charts.

Passed

No unconnected transitions, states or junctions found in Stateflow Charts.

- Check for exclusive states in state machines

Identify states which are the only substate within a state with OR(exclusive) type decomposition.

Passed

All states with OR(exclusive) type decomposition have more than one substate.

- Check usage of parallel states

Substates of parallel states should not be parallel states.

Passed

All Stateflow Charts pass the check.

- Check Stateflow transition appearance

Identify Stateflow transitions visually overlapping other Stateflow objects.

Passed

No transition violates the guidelines for Stateflow transition appearance.

- Check default transition placement in Stateflow charts

Identify all groupings of states that do not have a default transition or do not have the default state as the top-most state.

Passed

No Stateflow charts and states found that violate the guidelines for default transition placement in Stateflow charts.

- Check usage of transitions to external states

Identify transitions ending on external child states.

Passed

No direct transitions found from external state to child state.

- Check for unexpected backtracking in state transitions

Identify configuration parameter settings which identify unexpected backtracking in state transitions.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Unexpected backtracking (SFUnexpectedBacktrackingDiag)	error	error

✓ Check usage of internal transition

Internal transition lines should start from the left edge of the state.

Passed

No Stateflow transitions found that violate the guidelines for starting point of internal transition in Stateflow.

✓ Check usage of internal transitions in Stateflow states

Identify Stateflow states using multiple internal transitions.

Passed

No Stateflow states found with multiple internal transitions

✓ Check prohibited combination of state action and flow chart

State actions and flow charts should not be combined in states.

Passed

No Stateflow states were found that combine state action and flow chart.

✓ Check transitions in Stateflow flow charts

Identify transitions in Stateflow flow charts that are drawn incorrectly.

Passed

All Stateflow transitions in flow charts are drawn correctly.

-
- Check usage of unconditional transitions in flow charts
Identify unconditional transitions in flow charts.

Passed

All unconditional transitions adhere to the guideline.

- Check terminal junctions in Stateflow
Identify usage of terminal junctions in flow charts.

Passed

Multiple terminal junctions were not found.

- Check usage of Stateflow comments
Identify comments that are nested or contain newline(s) in the middle in Stateflow for action language 'C'.

Passed

No comments found that are either nested or contain newline(s) in the middle.

Condition Transition/Action 0 5 0 12

- Check Stateflow chart action language
Check if the action language of Stateflow charts is set to 'C'.

Passed

All Stateflow Charts have action language set to 'C'.

- Check usage of numeric literals in Stateflow
Identify use of numeric literals in Stateflow states and transitions.

Passed

No numeric literals found in Stateflow charts.

- Check for pointers in Stateflow charts
Identify pointer operations on custom code variables.
Note: This check applies only to Stateflow charts that use C as the action language.

Passed

No pointer operations were found.

- ✓ Check usage of events in Stateflow charts

Identify undirected event broadcasts in Stateflow.

Passed

No instances of undirected event broadcast were found.

- ✓ Check order of state action types

Identify out of order state action types in Stateflow states.

Passed

No Stateflow states found with out of order state action types

- ✓ Check repetition of Action types

jc_0734: Number of state action types

Identifies repeated action types in a Stateflow State.

Passed

No Stateflow States were found.

- ✓ Check if state action type 'exit' is used in the model

Check if state action type 'exit' is used in the model.

Passed

State action type 'exit' is not used in the model.

- ✓ Check updates to variables used in state transition conditions

jc_0741: Timing to update data used in state chart transition conditions

Variables used in state transition conditions must not perform an update by "during" state action type.

Passed

No Stateflow states found that violate the guidelines for updating the variables used in state transition conditions.

-
-  Check usage of transition conditions in Stateflow transitions
Identify unconditional Stateflow transitions with higher priority than conditional transitions.

Passed

No unconditional Stateflow transitions found with higher priority than conditional transitions

-  Check condition actions and transition actions in Stateflow
Identify usage of transition actions in Stateflow.

Passed

No Stateflow charts have transition actions.

-  Check for MATLAB expressions in Stateflow blocks
Identify MATLAB expressions that are not suitable for code generation in Stateflow blocks.

Passed

No Stateflow objects found using MATLAB expressions unsuitable for code generation.

-  Check usage of floating-point expressions in Stateflow charts

Error occurred during model compile.

-  Check Stateflow operators

Error occurred during model compile.

-  Check prohibited comparison operation of logical type signals

Error occurred during model compile.

-  Check usage of unary minus operations in Stateflow charts
Error occurred during model compile.
-

-  Check for implicit type casting in Stateflow

Error occurred during model compile.

-  Check usage of graphical functions in Stateflow

Check for calls between graphical functions.

Passed

No calls between graphical functions were found.

 Label Description  0  0  0  0  10  0

-  Check uniqueness of Stateflow State and Data names

jc_0732: Distinction between state names, data names, and event names

Identify Stateflow State and Stateflow Data that have identical names in a given chart.

Passed

No Stateflow charts were found.

-  Check uniqueness of State names

jc_0730: Unique state name in Stateflow blocks

Identifies identical State names within a Stateflow Chart.

Passed

No Stateflow charts were found.

-  Check usage of State names

jc_0731: State name format

Identify state names with '/' at its end.

Passed

No Stateflow states were found.

-  Check entry formatting in State blocks in Stateflow charts

Identify missing line breaks between entry action (en), during action (du), and exit action (ex) entries in states. Identify missing line breaks after semicolons (;) in statements.

Passed

All state entries found are correctly formatted.

- ✓ Check indentation of code in Stateflow states

Identify non-uniform indentation in Stateflow blocks.

Passed

All Stateflow blocks have uniform indentation.

- ✓ Check for usage of text inside states

Identify Stateflow states with text exceeding the boundary of the state.

Passed

No Stateflow states found with text exceeding the boundary of the state.

- ✓ Check position of label string in Stateflow transition

Identify placement of label string in Stateflow transition.

Passed

All Stateflow transitions are placed uniformly.

- ✓ Check position of comments in transition labels

Identify comments in transition labels that are not positioned uniformly.

Passed

Comments in transition labels are positioned uniformly.

- ✓ Check usage of parentheses in Stateflow transitions

jc_0752: Condition action in transition label

Start new line before and after parentheses for condition actions in Stateflow transitions.

Passed

No Stateflow Transitions found that violate the requirement for new line for condition actions.

- Check for comments in unconditional transitions
Identify comments in unconditional transitions without action statements.

Passed

All unconditional transitions without action statements have comments.

Miscellaneous 0 0 0 0 4 0

- Check return value assignments in Stateflow graphical functions
Identify graphical functions with multiple assignments of return values in Stateflow charts.

Passed

No Stateflow charts were found.

- Check uniqueness of Stateflow State and Data names
jc_0732: Distinction between state names, data names, and event names
Identify Stateflow State and Stateflow Data that have identical names in a given chart.

Passed

No Stateflow charts were found.

- Check usage of Simulink functions in Stateflow
Usage of Simulink Functions in Stateflow.

Passed

All Simulink Functions in Stateflow are defined according to the guideline.

- Check use of Simulink in Stateflow charts
na_0039: Limitation on Simulink functions in Chart blocks

Check use of Stateflow charts nested inside Simulink functions used in Stateflow.

Passed

No Stateflow charts found nested inside Simulink functions used in Stateflow.

MATLAB 0 2 0 0 7 0

 Check MATLAB code for global variables

Check for global variables in MATLAB code

Check for global variables in MATLAB code used in MATLAB Function blocks

Passed

No MATLAB Function blocks found

Check for global variables in MATLAB functions defined in Stateflow charts

Passed

No MATLAB functions defined in Stateflow charts found

Check for global variables in called MATLAB functions

Passed

No external MATLAB functions found

 Check usage of enumerated values

Error occurred during model compile.

 Check input and output settings of MATLAB Functions

Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity, data type, or size properties.

Passed

No MATLAB Functions found in the model or subsystem.



✓ Check lines of code in MATLAB Functions

Identify MATLAB Functions with high number of effective lines of code.

Passed

No MATLAB Function found with high number of effective lines of code.

✓ Check the number of function calls in MATLAB Function blocks

Checks whether number of function calls in MATLAB Function blocks is less than 3.

Passed

Number of function calls in MATLAB Function blocks is less than 3.

✓ Check nested conditions in MATLAB Functions

Identify nested if/else and case statements in MATLAB Functions.

Passed

No MATLAB Function found with deeply nested if/else and case statements.

✓ Check usage of character vector inside MATLAB Function block

Identify usage of strings in MATLAB Function blocks.

Passed

No character vectors found in MATLAB Function block

✓ Check usage of recommended patterns for Switch/Case statements

Identify usage of non-constant variables in Switch/Case statements.

Passed

Non-constant variables are not used as Switch/Case arguments

 Check for use of C-style comment symbols

Error occurred during model compile.

 Modeling Standards for JMAAB  0  25  29  0  74  0

 Naming Conventions  0  2  6  0  6  0

 Check file names

Characters allowed for file names

Warning

The following files have invalid names:

- C:\Users\DELL\Desktop\01FE18BAR001 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR011 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR024-Progress Report Feb 2022.docx
- C:\Users\DELL\Desktop\ABS BLACK BOX.docx
- C:\Users\DELL\Desktop\ABS SWOT ANALYSIS.docx
- C:\Users\DELL\Desktop\ABS blockdiagram.drawio
- C:\Users\DELL\Desktop\ABS flowchart.drawio
- C:\Users\DELL\Desktop\ABS flowchart.svg
- C:\Users\DELL\Desktop\ABS_v1.pdf.log
- C:\Users\DELL\Desktop\Car wiper system.prj
- C:\Users\DELL\Desktop\LAUNCHER - Shortcut (2).lnk
- C:\Users\DELL\Desktop\Launcher - Shortcut.lnk
- C:\Users\DELL\Desktop\Microsoft Teams.lnk
- C:\Users\DELL\Desktop\Microsoft Visual Studio 2010.lnk

- C:\Users\DELL\Desktop\Omkar - Chrome.lnk
- C:\Users\DELL\Desktop\PC Health Check.lnk
- C:\Users\DELL\Desktop\Personal - Edge.lnk
- C:\Users\DELL\Desktop\Proteus 8 Professional.lnk
- C:\Users\DELL\Desktop\RoboAnalyzer - Shortcut.lnk
- C:\Users\DELL\Desktop\SelfBalancingEV_V2.slx.autosave
- C:\Users\DELL\Desktop\Simulink onramp.pdf
- C:\Users\DELL\Desktop\Visual Studio Code.lnk
- C:\Users\DELL\Desktop\Youngblood_x64vk - Shortcut.lnk
- C:\Users\DELL\Desktop\eagle - Shortcut.lnk
- C:\Users\DELL\Desktop\energia - Shortcut.lnk
- C:\Users\DELL\Desktop\matlab - Shortcut.lnk
- C:\Users\DELL\Desktop\simulide - Shortcut.lnk

^ Less

Recommended Action

Consider having only alphanumeric characters and underscores in file name.

Number at the beginning

Warning

The following files have numbers at the beginning of the file name:

- C:\Users\DELL\Desktop\01FE18BAR001 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR011 simulink onramp.pdf
- C:\Users\DELL\Desktop\01FE18BAR024-Progress Report Feb 2022.docx

- C:\Users\DELL\Desktop\11111111111.xlsx

Recommended Action

Consider having alphabetic character at the beginning of the file name.

reserved MATLAB word

Single

Warning

The following files have Reserved MATLAB words as the file name:

- C:\Users\DELL\Desktop\ABS.docx
- C:\Users\DELL\Desktop\Report.html

Recommended Action

Consider not having Reserved MATLAB word as the file name.



Characters allowed for folder names

Warning

The following folders have invalid names:

- C:\Users\DELL\Desktop\.metadata
- C:\Users\DELL\Desktop\SBEV-V2
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f
- C:\Users\DELL\Desktop\modelling 2021b

- C:\Users\DELL\Desktop\.metadata\.plugins
- C:\Users\DELL\Desktop\.metadata\.plugins\com.st.stm32cube.ide.mcu.informationcenter
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.flatpak.launcher
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.make.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.make.ui
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.managedbuilder.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.cdt.ui
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.runtime
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.debug.core
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.debug.ui
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.e4.workbench
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.ui.refactoring
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.editors
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.ide
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.intro
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ui.workbench
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.projects
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.root
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.safetable
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.projects\test\.indexes
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.root\.indexes
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.runtime\.settings
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings

- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings\workspace
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\base-cygwin
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\base-files
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\ca-certificates
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release\crypto-policies
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\guile 2.2
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\ipc-utils
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\man-db
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\p11-kit
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\util-linux
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\w32api-headers
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\w32api-runtime
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\windows-default-manifest
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\cygwin\cygwin-devel

- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\db\libdb5.3
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\gcc\gcc-core
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\gcc\libstdc++6
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\guile 2.2\libguile2.2_1
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\ncurses\terminfo-extra
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\openssl\libssl1.1
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\p11-kit\libp11-kit0
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\p11-kit\p11-kit-trust
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\popt\libpopt-common
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\vim\vim-minimal
- C:\Users\DELL\Desktop\modelling 2021b\modelling evolution system
- C:\Users\DELL\Desktop\resources\project\BJY4x-kaKaw1qa3TDQljsz4GiTQ
- C:\Users\DELL\Desktop\resources\project\EEtUIUb-dLAdf0KpMVivaUlztwA
- C:\Users\DELL\Desktop\resources\project\fjRQtWiSly7hIij-Kmk87M7s21k
- C:\Users\DELL\Desktop\resources\project\rYiX-ReOw6h3ti9I7XtgLX04QKU

[^ Less](#)

Recommended Action

Consider having only alphanumeric characters and underscores in folder name.

reserved MATLAB word

Single

Warning

The following folders have reserved MATLAB words as the folder name:

- C:\Users\DELL\Desktop\ABS
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\db
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\gzip
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\perl
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\run
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\tar
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\which
- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\x86_64\release\texinfo\inf
- o

Recommended Action

Consider not having reserved MATLAB word as the folder name.

Number at the beginning

Warning

The following folders have numbers at the beginning of the folder name:

- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\1
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\19
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\44
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\4f
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.core.resources\.history\94
-
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings\.workspace\2022
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings\.workspace\2022\3
- C:\Users\DELL\Desktop\.metadata\.plugins\org.eclipse.ltk.core.refactoring\.refactorings\.workspace\2022\3\11

Recommended Action

Consider having alphabetic character at the beginning of the folder name.

Underscore at the beginning

Warning

The following folders have underscores at the beginning of the folder name:

- C:\Users\DELL\Desktop\https%3a%2f%2fcygwin.mirror.constant.com%2f\noarch\release_autorebase

Recommended Action

Consider having alphabetic character at the beginning of the folder name.

 [Check subsystem names](#)

Single reserved MATLAB word

Warning

The following subsystems have reserved MATLAB words as the subsystem name:

- SelfBalancingEV_V2/MODES

Recommended Action

Consider not having reserved MATLAB word as the subsystem name.

 [Check port block names](#)

Characters allowed for port block names

Warning

The following port blocks have invalid names:

- SelfBalancingEV_V2/ABS control System/Desired wheel slip
- SelfBalancingEV_V2/ABS control System/Stopping Distance
- SelfBalancingEV_V2/ABS control System/relative slip calculator/wheel speed
-
- SelfBalancingEV_V2/Thermal Management/Maximum temp
- SelfBalancingEV_V2/Accelration Limit Tester/Switch System
-
- SelfBalancingEV_V2/System Switch/System Switch

-
-
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
-
- SelfBalancingEV_V2/Correction Generator/Deviation Angle
- SelfBalancingEV_V2/ABS control System/Wheel Speed
-
- SelfBalancingEV_V2/ABS control System/Wheel Slip
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
-
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/tyre torque
-
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/wheel speed
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF
- SelfBalancingEV_V2/ABS control System/Vehicle Speed

Λ Less

Recommended Action

Consider having only alphanumeric characters and underscores in port block name.

Reserved MATLAB word

Single

Warning

The following port blocks have reserved MATLAB words as the port block name:

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/error
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback
- SelfBalancingEV_V2/Correction Generator/Feedback
-

Recommended Action

Consider not having reserved MATLAB word as the port block name.

 [Check character usage in block names](#)

Characters allowed for block names

Warning

The following blocks have invalid names:

- SelfBalancingEV_V2/ABS control System/normal force
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
- SelfBalancingEV_V2/stopping distance
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame/World Frame
- SelfBalancingEV_V2/Switch_Mode(0-4)
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2
- SelfBalancingEV_V2/vehicle speed
-
- SelfBalancingEV_V2/Diplay for voltage status
- SelfBalancingEV_V2/wheel speed

-
-
- SelfBalancingEV_V2/Display for State of charge
- SelfBalancingEV_V2/Display for current
- SelfBalancingEV_V2/System Switch/System Status ON//OFF
- SelfBalancingEV_V2/ABS control System/ang vehicle speed
- SelfBalancingEV_V2/Voltage graph
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4
- SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
- SelfBalancingEV_V2/Graph of maintained temperature
- SelfBalancingEV_V2/Subsystem/Right Indicator
-
- SelfBalancingEV_V2/ABS control System/mu-slip lookup table
-
- SelfBalancingEV_V2/wheel speed on braking
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1
-
-
- SelfBalancingEV_V2/Input Acceleration
- SelfBalancingEV_V2/ABS control System/angular vehicle speed
- SelfBalancingEV_V2/vehicle speed on braking
- SelfBalancingEV_V2/Output Angle of deviotaion
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame/Mechanism Configuration
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3

-
- SelfBalancingEV_V2/ON//OFF
-
- SelfBalancingEV_V2/Charge percentage
- SelfBalancingEV_V2/distance between point of braking and stopping
- SelfBalancingEV_V2/Wheel slip
-
-
- SelfBalancingEV_V2/Correction Generator/rad 2 deg
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 3
-
- SelfBalancingEV_V2/Subsystem/High Speed
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2
-
- SelfBalancingEV_V2/ABS control System/wheel radius
- SelfBalancingEV_V2/Current graph
- SelfBalancingEV_V2/ABS control System/stopping distance

Λ Less

Recommended Action

Consider having only alphanumeric characters and underscores in block name.

reserved MATLAB word

Single

Warning

The following blocks have reserved MATLAB words as the block name:

- SelfBalancingEV_V2/Accelration Limit Tester/const
- SelfBalancingEV_V2/MODES/WRONC_INPUT/NULL

Recommended Action

Consider not having reserved MATLAB word as the block name.

 Check character usage in signal names and bus names

Single reserved MATLAB word

Warning

The following signals or buses have reserved MATLAB words as the name:

- SelfBalancingEV_V2/ABS control System/error
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback

Recommended Action

Consider not having reserved MATLAB word as the signal or bus names.

Characters allowed for signal names and bus names

Warning

The following signals or buses have invalid names:

- SelfBalancingEV_V2/ABS control System/Vehicle Speed
- SelfBalancingEV_V2/ABS control System/relative slip calculator/actual relative slip
- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/wheel speed
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/out(+1/-1)
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking torque
- SelfBalancingEV_V2/Input Signal
- SelfBalancingEV_V2/Input Value
- SelfBalancingEV_V2/Maximum temp
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Output Value
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Correction Generator/Initaial Deviation
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Accelration Input

Λ Less

Recommended Action

Consider having only alphanumeric characters and underscores in signal names and bus names.



Check character usage in parameter names

Error occurred during model compile.

- ✓ Check length of model file name

Check length of model file name

Passed

Model name is valid.

- ✓ Check length of folder name at every level of model path

The model file name is: SelfBalancingEV_V2

Passed

Folder names are valid.

- ✓ Check length of subsystem names

Passed

- ✓ Check length of Import and Outport names

Passed

- ✓ Check length of signal and bus names

Check length of signal and bus names

Passed

All signal and bus names are valid.

- ✗ Check length of parameter names

Error occurred during model compile.

- ✓ Check length of block names

Passed

 **Check for mixing basic blocks and subsystems**

Identify levels in the model that include basic blocks and subsystems. Each level of a model must be designed with blocks of the same level (for example, only subsystems or only basic blocks).

Warning

The following level(s) in the model include basic blocks and subsystems:

System	Block path
SelfBalancingEV_V2	SelfBalancingEV_V2/Charge percentage
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant1
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant2
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant3
SelfBalancingEV_V2	SelfBalancingEV_V2/Constant4
SelfBalancingEV_V2	SelfBalancingEV_V2/Current graph
SelfBalancingEV_V2	SelfBalancingEV_V2/Diplay for voltage status" title="SelfBalancingEV_V2/Diplay for voltage status"
SelfBalancingEV_V2	SelfBalancingEV_V2/Display
SelfBalancingEV_V2	SelfBalancingEV_V2/Display for State of charge" title="SelfBalancingEV_V2/Display for State of charge"
SelfBalancingEV_V2	SelfBalancingEV_V2/Display for current
SelfBalancingEV_V2	SelfBalancingEV_V2/Display1

SelfBalancingEV_V2	SelfBalancingEV_V2/Graph of maintained temperature" title="SelfBalancingEV_V2/Graph of maintained temperature
SelfBalancingEV_V2	SelfBalancingEV_V2/Input Acceleration
SelfBalancingEV_V2	SelfBalancingEV_V2/Lamp
SelfBalancingEV_V2	SelfBalancingEV_V2/Lamp1
SelfBalancingEV_V2	SelfBalancingEV_V2/ON//OFF
SelfBalancingEV_V2	SelfBalancingEV_V2/Output Angle of deviotaion " title="SelfBalancingEV_V2/Output Angle of deviotaion
SelfBalancingEV_V2	SelfBalancingEV_V2/Saturation
SelfBalancingEV_V2	SelfBalancingEV_V2/Self_Balance_Mode
SelfBalancingEV_V2	SelfBalancingEV_V2/Side Lights
SelfBalancingEV_V2	SelfBalancingEV_V2/Speed_Modes
SelfBalancingEV_V2	SelfBalancingEV_V2/Switch
SelfBalancingEV_V2	SelfBalancingEV_V2/Switch_Mode(0-4)
SelfBalancingEV_V2	SelfBalancingEV_V2/Voltage graph
SelfBalancingEV_V2	SelfBalancingEV_V2/Wheel slip
SelfBalancingEV_V2	SelfBalancingEV_V2/distance between point of braking and stopping" title="SelfBalancingEV_V2/distance between point of braking and stopping
SelfBalancingEV_V2	SelfBalancingEV_V2/stopping distance
SelfBalancingEV_V2	SelfBalancingEV_V2/vehicle speed
SelfBalancingEV_V2	SelfBalancingEV_V2/vehicle speed on braking" title="SelfBalancingEV_V2/vehicle speed on braking
SelfBalancingEV_V2	SelfBalancingEV_V2/wheel speed
SelfBalancingEV_V2	SelfBalancingEV_V2/wheel speed on braking" title="SelfBalancingEV_V2/wheel speed on braking
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Gain" title="SelfBalancingEV_V2/ABS control System/Gain

SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Relative Slip" title="SelfBalancingEV_V2/ABS control System/Relative Slip
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Stop Simulation" title="SelfBalancingEV_V2/ABS control System/Stop Simulation
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/Sum" title="SelfBalancingEV_V2/ABS control System/Sum
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/angular vehicle speed" title="SelfBalancingEV_V2/ABS control System/angular vehicle speed
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/mu-slip lookup table" title="SelfBalancingEV_V2/ABS control System/mu-slip lookup table
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/normal force" title="SelfBalancingEV_V2/ABS control System/normal force
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/stopping distance" title="SelfBalancingEV_V2/ABS control System/stopping distance
SelfBalancingEV_V2/ABS control System	SelfBalancingEV_V2/ABS control System/wheel radius" title="SelfBalancingEV_V2/ABS control System/wheel radius
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator	SelfBalancingEV_V2/ABS control System/wheel speed calculator/Gain" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Gain
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator	SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited
SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1

title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure"
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/force and torque" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/force and torque"
SelfBalancingEV_V2/ABS control System/wheel speed calculator" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator"	SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/hydraulic lag
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system"	SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Controlled Current Source1"
SelfBalancingEV_V2/State of charge, current and voltage monitoring system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system"	SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/Vehicle battery"
SelfBalancingEV_V2/Two Wheeled Bike	SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2" title="SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2"
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block"	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn1"
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block"	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn2" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/Conn2"
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart"	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform1"

SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Conn1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Conn1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2 " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3 " title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 1
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis	SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/Conn1" title="SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/Conn1

Λ Less

Recommended Action

If possible, replace blocks at the identified level of the model hierarchy with basic blocks. Move nonvirtual blocks into the identified subsystem.



Check Implement logic signals as Boolean data (vs. double)

Identify whether **Implement logic signals as Boolean data (vs. double)** is selected.

Passed

Implement logic signals as Boolean data (vs. double) is selected.

Check diagnostic settings for incorrect calculation results

Identify data validity diagnostic settings which detect incorrect calculation results.

Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	Division by singular matrix (CheckMatrixSingularityMsg)	none	error
Warning	Inf or NaN block output (SignalInfNanChecking)	none	error
Warning	Wrap on overflow (IntegerOverflowMsg)	warning	error

Warning	Saturate on overflow (IntegerSaturationMsg)	warning	error
---------	---	---------	-------

Recommended Action

Follow the links in the result table to modify the model configuration parameters.



Check for Simulink diagrams using nonstandard display attributes

Identify nonstandard display attributes in Simulink diagrams.

Check format settings

Identify incorrect model-level format options.

Warning

The following format display options are incorrect.

Display Attribute	Recommended Value	Actual Value
Debug > Information Overlays > Nonscalar Signals	on	off
Modeling > Environment > Model Browser	off	on
Debug > Information Overlays > Show All Links	none	disabled

Recommended Action

Set the format options to the recommended value.

Check block colors

Identify blocks using nonstandard colors.

Passed

All blocks use standard colors.

Check canvas colors

Identify canvases that are not white.

Passed

All diagrams use a white canvas.

Check diagram zoom

Identify diagrams that do not have zoom factor set to 100 %.

Note: Zoom factors can differ for each instance of a model diagram opened in Simulink Editor

Warning

The following diagrams do not have zoom factor set to 100 percent:

- SelfBalancingEV_V2
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller"
title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller"

- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system" title="SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system"
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management/PID Controller
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

For each listed diagram, select **Modeling > Environment > Zoom > Normal View (100%)**.



[Check Model font settings](#)

[Check font size in Simulink block and signal names](#)

Warning

The font size of the following Simulink block or signal names are different from input parameters:

- SelfBalancingEV_V2/
- SelfBalancingEV_V2/

Recommended Action

Consider modifying font size of block and signal names as per input parameters.

Check position of Import and Outport blocks

Check positions of Import blocks

Warning

The following Import blocks are not placed to the extreme left side of the diagram:

- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/MODES/Bike ON//OFF/In2
- SelfBalancingEV_V2/MODES/ECO_MODE/In2
- SelfBalancingEV_V2/MODES/SPORTS_MODE/In2
- SelfBalancingEV_V2/MODES/URBAN_MODE/In2
-

Recommended Action

Move the Import blocks identified to the left of all other blocks in the diagram.

It is acceptable to move the Import block to the right only to prevent signal crossings.

Check**positions of Outport blocks****Warning**

The following Outport blocks are not placed to the extreme right side of the diagram:

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/wheel speed
- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/ABS control System/Wheel Slip
- SelfBalancingEV_V2/ABS control System/Vehicle Speed
- SelfBalancingEV_V2/Correction Generator/Deviation Angle
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF
-
-
-
-
- SelfBalancingEV_V2/Thermal Management/output
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/output

Λ Less

Recommended Action

Move the Outport blocks identified to the right of all other blocks in the diagram.

It is acceptable to move the Outport block to the left only to prevent signal crossings.

 Check whether block names appear below blocks
Incorrect block name position

Warning

The following blocks have names that do not display below the blocks:

-
- SelfBalancingEV_V2/Correction Generator/rad 2 deg
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Divide
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3
- SelfBalancingEV_V2/Goto
- SelfBalancingEV_V2/Correction Generator/initial disturbance
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
-
- SelfBalancingEV_V2/Input Acceleration
-
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2
- SelfBalancingEV_V2/Correction Generator/Feedback
-
- SelfBalancingEV_V2/Accelration Limit Tester/Switch1
- SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2

- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
- SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Sum1
- SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1

Λ Less

Recommended Action

Change the location such that the block name is below the block.

Check the display attributes of block names

Identify whether to display block names.

Check for blocks with hidden names and obvious function

Identify block names that are displayed but can be hidden due to obvious behavior.

Warning

The following block names can be hidden:

- SelfBalancingEV_V2/MODES/ECO_MODE/Compare To Constant Eco_mode
- SelfBalancingEV_V2/MODES/SPORTS_MODE/Compare To Constant Sports_mode
- SelfBalancingEV_V2/MODES/Self_Balance/Compare To Constant Self_balance
- SelfBalancingEV_V2/MODES/URBAN_MODE/Compare To Constant Urban_mode
- SelfBalancingEV_V2/MODES/WRONG_INPUT/Compare To Constant Wrong_input
- SelfBalancingEV_V2/System Switch/System Status ON//OFF

Recommended Action

Hide the block name by selecting (**Format > Auto Name > Hide Automatic Block Name**).

Check

for non-descriptive displayed block names

Identify block names that are displayed but should be hidden due to a lack of a descriptive name.

Warning

The following blocks have a name displayed, however, the name is not descriptive:

- SelfBalancingEV_V2/Thermal Management/output
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/output

Recommended Action

Modify the block name to provide descriptive information, or hide the block name by selecting (**Format > Auto Name > Hide Automatic Block Name**).

Check

for missing block names

Identify block names that are hidden but should be displayed to show a descriptive name.

Warning

The following blocks have descriptive names, however, the names are hidden:

- SelfBalancingEV_V2/ABS control System/Relative Slip

- SelfBalancingEV_V2/Lamp
- SelfBalancingEV_V2/Lamp1
- SelfBalancingEV_V2/Side Lights

Recommended Action

Modify the blocks to show the block name by deselecting (**Format > Auto Name > Hide Automatic Block Name**).

Check for nondefault block attributes

Identify blocks that use and fail to display nondefault values.

Warning

The following blocks use and fail to display nondefault values:

Block	Parameter	Expected Value	Actual Value
SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	InitialCondition	0	100
SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	LimitOutput	off	on
SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	UpperSaturationLimit	inf	1000
SelfBalancingEV_V2/ABS control System/ang vehicle speed" title="SelfBalancingEV_V2/ABS control System/ang vehicle speed	LowerSaturationLimit	-inf	0

SelfBalancingEV_V2/ABS control System/mu-slip lookup table" title="SelfBalancingEV_V2/ABS control System/mu-slip lookup table	RndMeth	Floor	Simplest
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	InitialCondition	0	100/2
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	LimitOutput	off	on
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	UpperSaturationLimit	inf	1000
SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/Integrator Limited	LowerSaturationLimit	-inf	0
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion	RndMeth	Floor	Zero
SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion1" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Data Type Conversion1	RndMeth	Floor	Zero
SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure"	LimitOutput	off	on
SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure"	UpperSaturationLimit	inf	1000

SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure" title="SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking pressure	LowerSaturationLimit	-inf	0
SelfBalancingEV_V2/Acceleration Limit Tester/Switch1" title="SelfBalancingEV_V2/Acceleration Limit Tester/Switch1	Threshold	0	4
SelfBalancingEV_V2/Saturation	UpperLimit	0.5	1
SelfBalancingEV_V2/Saturation	LowerLimit	-0.5	0
SelfBalancingEV_V2/Subsystem/Saturation	UpperLimit	0.5	20
SelfBalancingEV_V2/Subsystem/Saturation	LowerLimit	-0.5	0

Λ Less

Recommended Action

For the above blocks, display the nondefault value using the Block Annotation pane of the Block Properties dialog box.

✓ Check trigger signal names

Identify trigger blocks where the origin of the trigger signal and the destination have dissimilar names.

Passed

No violation of the guideline for use of trigger signal names.

⚠ Check for unconnected signal lines and blocks

Check for unconnected subsystems and basic blocks

Warning

The following blocks in the model are not connected:

- SelfBalancingEV_V2/MODES/WRONC_INPUT/Switch5

Recommended Action

Connect the blocks to the correct source or destination block.

If the destination block is not known, use a Terminator or Ground block to terminate the line.

Check

for unconnected signal lines

Warning

The following signal lines in the model are not connected:

- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_

- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

Connect the signal lines to the correct source or destination block.

If the destination block is not known, use a Terminator or Ground block to terminate the line.

 Check usage of Switch blocks

Error occurred during model compile.

 Check usage of Relational Operator blocks

Identify Relational Operator blocks that connect to constants with the first (upper) input value.

Passed

All Relational Operator blocks with constant input values are configured correct.

 Check Indexing Mode

Identify blocks and charts with inconsistent Indexing mode.

Passed

No inconsistent Indexing mode used in the model.

 Check usage of tunable parameters in blocks

Identify tunable parameters used to specify expressions, data type conversions, or indexing operations.

Passed

Tunable parameters are not used in the model.

 Check definition of signal labels

Identify blocks that require labeled signals. A subset of source and destination blocks require labeled signals.

Check source block labels

Warning

The following signals have no label:

- SelfBalancingEV_V2/ABS control System/Desired wheel slip/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/wheel speed/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/vehicle speed/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/error/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/tyre torque/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/error/
- SelfBalancingEV_V2/MODES/Swithc_Mode/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/u/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/ln2/
- SelfBalancingEV_V2/MODES/ECO_MODE/u/
- SelfBalancingEV_V2/MODES/ECO_MODE/ln2/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/u/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/ln2/
- SelfBalancingEV_V2/MODES/Self_Balance/u/
- SelfBalancingEV_V2/MODES/URBAN_MODE/u/
- SelfBalancingEV_V2/MODES/URBAN_MODE/ln2/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/u/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/input_signal/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/ln1/
- SelfBalancingEV_V2/Subsystem/u/
- SelfBalancingEV_V2/System Switch/System Switch/

- SelfBalancingEV_V2/Thermal Management/Maximum temp/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/Self_Balance/
- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/
- SelfBalancingEV_V2/Thermal Management/
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Constant/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/Constant/
- SelfBalancingEV_V2/Accelration Limit Tester/const/

- SelfBalancingEV_V2/Constant2/
- SelfBalancingEV_V2/Constant3/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Off_speed/
- SelfBalancingEV_V2/MODES/ECO_MODE/Eco_mode/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/Sports_mode/
- SelfBalancingEV_V2/MODES/Self_Balance/OFF/
- SelfBalancingEV_V2/MODES/Self_Balance/ON/
- SelfBalancingEV_V2/MODES/URBAN_MODE/Urban_mode/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/NULL/
- SelfBalancingEV_V2/ON//OFF/
- SelfBalancingEV_V2/Subsystem/Constant/
- SelfBalancingEV_V2/Subsystem/High Speed/
- SelfBalancingEV_V2/Subsystem/Right Indicator/
- SelfBalancingEV_V2/Switch_Mode(0-4)/
- SelfBalancingEV_V2/System Switch/Constant/
- SelfBalancingEV_V2/System Switch/Constant1/

Λ Less

Recommended Action

Add a new or propagated label to the signal line.

Identify
blocks that require labeled signals. A subset of source and destination blocks require labeled signals.

Check destination block labels

Warning

The following signals have no label:

- SelfBalancingEV_V2/ABS control System/Wheel Slip/
- SelfBalancingEV_V2/ABS control System/Stopping Distance/
- SelfBalancingEV_V2/Correction Generator/Deviation Angle/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Out1/
- SelfBalancingEV_V2/MODES/ECO_MODE/Out1/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/Out1/
- SelfBalancingEV_V2/MODES/Self_Balance/Out1/
- SelfBalancingEV_V2/MODES/URBAN_MODE/Out1/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/Out1/
- SelfBalancingEV_V2/MODES/Speed_range/
- SelfBalancingEV_V2/MODES/Self_Balance ON//OFF/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<SOC (%)>/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<Current (A)>/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/<Voltage (V)>/
- SelfBalancingEV_V2/Subsystem/Out1/
- SelfBalancingEV_V2/Thermal Management/output/
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block/output/
- SelfBalancingEV_V2/ABS control System/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/
- SelfBalancingEV_V2/MODES/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/Bike ON//OFF/
- SelfBalancingEV_V2/MODES/ECO_MODE/
- SelfBalancingEV_V2/MODES/ECO_MODE/

- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/SPORTS_MODE/
- SelfBalancingEV_V2/MODES/Self_Balance/
- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/URBAN_MODE/
- SelfBalancingEV_V2/MODES/WRONG_INPUT/
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/

Λ Less

Recommended Action

Add a new or propagated label to the signal line.



[Check Signal name propagation](#)

Check Signal name propagation for subsystems

Warning

The following subsystems do not have propagated signal labels:

- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/relative slip calculator

- SelfBalancingEV_V2/ABS control System/wheel speed calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/WRONG_INPUT
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system

- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2
- SelfBalancingEV_V2/Thermal Management

Λ Less

Recommended Action

Add labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

Check

Signal name propagation for subsystems

Warning

The following subsystems do not display propagated signals but have signal names:

- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/input_signal

- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback

Recommended Action

Remove labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

Check

Signal name propagation for connection blocks

Warning

The following connection blocks do not display propagated signals but have signal names:

- SelfBalancingEV_V2/Angle of deviation

Recommended Action

Remove labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

 **Check usage of Discrete-Time Integrator block**

Check usage of recommended settings for Discrete-Time Integrator blocks to prevent unexpected results.

Passed

All Discrete-Time Integrator blocks have recommended settings.

 **Check settings for data ports in Multiport Switch blocks**

Error occurred during model compile.

-  Check usage of fixed-point data type with non-zero bias

Error occurred during model compile.

-  Check input and output datatype for Switch blocks

Error occurred during model compile.

-  Check signs of input signals in product blocks

Error occurred during model compile.

-  Check Signed Integer Division Rounding mode

jc_0642: Integer rounding mode setting

Identifies blocks with block parameter 'Integer Rounding Mode' set to 'Simplest' when the configuration parameter 'Signed integer division rounds to' is set to 'Undefined'.

Passed

Configuration parameter 'Signed integer division rounds to' is not set to 'Undefined'.

-  Check type setting by data objects

Error occurred during model compile.

-  Check usage of the Saturation blocks

Error occurred during model compile.

-  Check usage of Merge block

jc_0659: Usage restrictions of signal lines input to Merge blocks

There must not be any block between a Conditional Subsystem block and a Merge block.

Passed

No Merge block found.

 Check usage of Memory and Unit Delay blocks
Error occurred during model compile.

 Check block orientation
Check block orientation

Warning

The following blocks have rotated or reversed orientation:

- SelfBalancingEV_V2/ABS control System/Relative Slip
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Divide
- SelfBalancingEV_V2/ABS control System/relative slip calculator/Sum1
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/Correction Generator/PID Controller
- SelfBalancingEV_V2/Correction Generator/Simulink-PS Converter1
- SelfBalancingEV_V2/Correction Generator/Sum
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/Correction Generator/rad 2 deg
- SelfBalancingEV_V2/Correction Generator/Correction
- SelfBalancingEV_V2/Goto
-
-
-
- SelfBalancingEV_V2/Thermal Management/Controlled Temperature Source
- SelfBalancingEV_V2/Thermal Management/PS-Simulink Converter1

- SelfBalancingEV_V2/Thermal Management/Thermal Reference1
-
-
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/Rigid Transform2
-
-
-
-
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/shaft
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/PL1_PL3
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R3
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /PL1_R4
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /rod 4
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars /Conn1
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 2
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/plate 3
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame/a
- SelfBalancingEV_V2/Two Wheeled Bike/Prismatic Joint2

Λ Less

Recommended Action

Flip/rotate the blocks to be oriented towards the right.

- Check if blocks are shaded in the model
Check if blocks are shaded in the model

Passed

Blocks in the model are not shaded.

- Check operator order of Product blocks
Passed
-

- Check icon shape of Logical Operator blocks
Passed
-

- Check if tunable block parameters are defined as named constants
Check if tunable block parameters are defined as named constants

Warning

The following tunable block parameters are not defined as named constants.

Block	Violations
	InitialCondition : 100 UpperSaturationLimit : 1000
	Gain : 294.3
	Gain : 2
	UpperSaturationLimit : 1000

	UpperSaturationLimit : 1000
	Threshold : 4
SelfBalancingEV_V2/Constant	Value : 10
SelfBalancingEV_V2/Constant4	Value : 48
SelfBalancingEV_V2/Input Acceleration	Value : 2
	Value : 20
	Value : 90
	Value : 45
SelfBalancingEV_V2/Subsystem/High Speed	Value : 20
	Value : 10
SelfBalancingEV_V2/Subsystem/Saturation	UpperLimit : 20

Λ Less

Recommended Action

Consider changing tunable block parameter literal values to named constants.

 [Check default/else case in Switch Case blocks and If blocks](#)

Check if default/else case in Switch Case blocks and If blocks are set to 'on'

Passed

Conditional Control blocks are valid.

 [Check usage of Lookup Tables](#)

Check Lookup method settings of n-D Lookup table blocks

Warning

The following n-D Lookup table blocks violate recommended Lookup method settings:

Block	Parameter	Current Value	Recommended Values
	ExtrapMethod	Linear	Clip
	UseLastTableValue	off	on

Recommended Action

Consider changing the above mentioned block parameters with the recommended values.



Check for parentheses in Fcn block expressions

Identify order of parentheses in Fcn block expressions.

Passed

All Fcn blocks use parentheses to mark operator precedence.



Check undefined initial output for conditional subsystems

Error occurred during model compile.



Check for avoiding algebraic loops between subsystems

jc_0653: Delay block layout in feedback loops

Identify delay blocks usage in feedback loops.

Passed

No delay blocks in feedback loops violate the guidelines for avoiding algebraic loops between subsystems.



Check comparison of floating point types in Simulink

Error occurred during model compile.

 **Check duplication of Simulink Data names**

Simulink Data names should be unique across base workspace, model workspace and data dictionary.

Passed

All Simulink Data names are unique.

 **Check unused data in Simulink Model**

Error occurred during model compile.

 **Check output data type of operation blocks**

jc_0651: Implementing a type conversion

Identify operation blocks that specify output data type.

Warning

Following operation blocks explicitly specify output data type:

-
-
- SelfBalancingEV_V2/Correction Generator/initial disturbance
- SelfBalancingEV_V2/MODES/Bike ON//OFF/Compare To Zero

Recommended Action

Instead of explicitly specifying output data type on operation blocks, use 'Data Type Conversion' block when changing the data type of the block output signal.

Check Model Description

Identify layers in the model having inconsistent description format.

Warning

Following layers do not have model descriptions:

- SelfBalancingEV_V2/MODES
- SelfBalancingEV_V2/MODES/Bike ON//OFF
- SelfBalancingEV_V2/MODES/ECO_MODE
- SelfBalancingEV_V2/MODES/SPORTS_MODE
- SelfBalancingEV_V2/MODES/Self_Balance
- SelfBalancingEV_V2/MODES/URBAN_MODE
- SelfBalancingEV_V2/MODES/WRONG_INPUT
-
- SelfBalancingEV_V2/Subsystem
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

Consider adding model description for all the layers.

layers in the model having inconsistent description format.

Warning

Following layers do not have consistent model description format:

- SelfBalancingEV_V2
- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Accelration Limit Tester
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
- SelfBalancingEV_V2/System Switch
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block

Λ Less

Recommended Action

Consider having a consistent format for the model description

Example: If description tags are 'Input:, Description:, and Output:' then format should be as following:

Input: add input information here

Description: add model description here

Output: add output information here

 Check for consistency in model element names

Check if model elements connected to a signal are following consistent naming

Warning

The following model elements are not consistent with the connected signal name:

Block Path	Expression
	Naming mismatch with signal name "Vehicle Speed"
	Naming mismatch with signal name "Wheel Speed"
	Naming mismatch with signal name "Wheel Speed"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "SOC (%)"
	Naming mismatch with signal name "Current (A)"
	Naming mismatch with signal name "Voltage (V)"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"
	Naming mismatch with signal name "Feedback"

	Naming mismatch with signal name "Acceleration Input"
	Naming mismatch with signal name "Angle of deviation"
SelfBalancingEV_V2/Goto	Naming mismatch with signal name "Angle of deviation"
SelfBalancingEV_V2/From	Naming mismatch with signal name "Angle of deviation"
SelfBalancingEV_V2/Input signal/Signal 1	Naming mismatch with signal name "input_signal"
SelfBalancingEV_V2/Subsystem/u	Naming mismatch with signal name "Input Signal"
SelfBalancingEV_V2/Subsystem/Out1	Naming mismatch with signal name "Output signal"

Λ Less

Recommended Action

Consider renaming the deviating model elements to match the signal name or to be consistent with Inport/Outport blocks.

⚠ Check for sample time setting

Check if sample time property of a block is set to -1 (inherited).

Warning

The following blocks do not have sample time set to -1 (inherited):

-

Recommended Action

Consider changing the sample time to -1 (inherited).



Check usage of Sum blocks

Check shape of Sum block

Warning

Following Sum blocks are "round" shaped but are not part of a feedback loop:

- SelfBalancingEV_V2/ABS control System/relative slip calculator/Sum1
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1
-
- SelfBalancingEV_V2/Correction Generator/Sum
- SelfBalancingEV_V2/Thermal Management/Sum

Recommended Action

Set the shape of Sum block to "rectangular".

Check

first input of Sum block

Warning

Following Sum blocks don't have '+' sign as first input and are not part of a feedback loop:

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/Sum1
- SelfBalancingEV_V2/Thermal Management/Sum

Recommended Action

Set first input to Sum block to '+' sign.

⚠ Check position of signal labels

Check position of signal labels

Warning

The following signals have labels placed at the top of signal line:

- SelfBalancingEV_V2/ABS control System/relative slip calculator/actual relative slip
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<Voltage (V)>
- SelfBalancingEV_V2/Angle of deviation

Recommended Action

Consider placing the labels underneath the signal lines.

location of signal labels

Check

Warning

The following signals do not have labels located at the origin of the signal line:

- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller/out(+1/-1)
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/braking torque
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/wheel speed
- SelfBalancingEV_V2/ABS control System/Vehicle Speed
- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/Acceleration Limit Tester/Feedback

- SelfBalancingEV_V2/Accelration Limit Tester/Feedback
- SelfBalancingEV_V2/Accelration Limit Tester/Acceleration Input
- SelfBalancingEV_V2/Correction Generator/Initaial Deviation
- SelfBalancingEV_V2/Correction Generator/Feedback
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<SOC (%)>
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<Current (A)>
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system/data acquisition system/<Voltage (V)>
- SelfBalancingEV_V2/Two Wheeled Bike/Feedback
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Input
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/input_signal
- SelfBalancingEV_V2/Maximum temp
- SelfBalancingEV_V2/Input Signal
- SelfBalancingEV_V2/Output Value
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Input Value

Λ Less

Recommended Action

Consider placing the labels at the origin of the signal line.

overlap of signal labels

Check

Warning

The following signals have labels which overlap other objects:

- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Feedback
- SelfBalancingEV_V2/Accelration Input
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/Angle of deviation
- SelfBalancingEV_V2/input_signal
- SelfBalancingEV_V2/Maximum temp
- SelfBalancingEV_V2/Input Signal
- SelfBalancingEV_V2/Output Value
- SelfBalancingEV_V2/Output signal
- SelfBalancingEV_V2/Input Value

Λ Less

Recommended Action

Consider placing the signal label so that it is readable.



Check for missing ports in Variant Subsystems

Check for number of inputs/outputs to a Variant Subsystem.

Passed

No Variant Subsystems found having different number of inputs/outputs in the Variant Subsystem choices.

- Check for cascaded Unit Delay blocks

Identify cascaded and tapped pattern of Unit Delay blocks.

Passed

No cascaded Unit Delay blocks found that can be changed to Tapped Delay/Delay block.

- Check for usage of Data Store Memory blocks

Identify the usage of Data Store Memory blocks.

Passed

Usage of Data Store Memory blocks is correct.

- Check fundamental logical and numerical operations

Error occurred during model compile.

- Check signal flow in model

Check placement of sequential blocks

Warning

The placement of blocks in the following subsystems can be improved:

- SelfBalancingEV_V2/ABS control System
- SelfBalancingEV_V2/ABS control System/relative slip calculator
- SelfBalancingEV_V2/ABS control System/wheel speed calculator
-
- SelfBalancingEV_V2/Correction Generator
- SelfBalancingEV_V2/State of charge, current and voltage monitoring system
-
-
-

- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis/pillars
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2

Λ Less

Recommended Action

Ensure that the signal flow in the mentioned subsystems is from left to right.

- All sequential blocks, except the blocks on feedback path, must be placed from left to right.
- All blocks, except the blocks on feedback path, should be oriented to the right.

 Check usage of vector and bus signals

Error occurred during model compile.

 Check connections between structural subsystems

Error occurred during model compile.

 Check position of conditional blocks and iterator blocks

Block layout in conditional subsystem

Warning

The following conditional blocks are not located at the top of the subsystem diagram:

- SelfBalancingEV_V2/MODES/Enable

Recommended Action

Reposition the conditional blocks listed above to the top of the subsystem diagram.

 Check signal line connections

Check signal intersections

Warning

The following signals intersect with other signals in the diagram:

- SelfBalancingEV_V2/ABS control System/Wheel Speed
- SelfBalancingEV_V2/ABS control System/wheel speed calculator/bang-bang controller
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis-pillars

Recommended Action

Reposition the above listed signals to avoid intersections.

Check

if signals are drawn as slanting lines

Warning

The following signals are drawn as slanting lines in the diagram:

- SelfBalancingEV_V2/Correction Generator/Initaial Deviation
- SelfBalancingEV_V2/Correction Generator

Recommended Action

Consider redrawing the above listed signals as vertical or horizontal lines.

Check

if signal lines are split into multiple sublines

Warning

The following signal lines are split into multiple sublines:

- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis

Recommended Action

Reposition the signals listed above to avoid splitting of signal lines.

Check

signal overlaps

Warning

The following signals overlap with other signals in the diagram:

- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Thermal Management
- SelfBalancingEV_V2/Two Wheeled Bike/Momentum Calculation Block
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/left wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/cart/right wheel_
- SelfBalancingEV_V2/Two Wheeled Bike/Physical Block/chassis
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame
- SelfBalancingEV_V2/Two Wheeled Bike/World Frame

Λ Less

Recommended Action

Reposition the above listed signals to avoid signal overlaps.

 Check scope of From and Goto blocks

Error occurred during model compile.

 Check for division by zero in Simulink

Error occurred during Simulink Design Verifier analysis. Simulink Design Verifier cannot be used with a variable-step solver. You must configure the solver options for a fixed-step solver. See documentation. Simulink Design Verifier failed to initialize: 'SelfBalancingEV_V2' is incompatible for design error detection with Simulink Design Verifier.

 Check use of single variable variant conditionals

Identify variant subsystems which use multi-variable compound conditions.

Passed

No variant subsystems with multiple variable compound conditions found

 Stateflow  0  6  0  0  46  0

 Check transitions in Stateflow flow charts

Identify transitions in Stateflow flow charts that are drawn incorrectly.

Passed

All Stateflow transitions in flow charts are drawn correctly.

 Check return value assignments in Stateflow graphical functions

Identify graphical functions with multiple assignments of return values in Stateflow charts.

Passed

No Stateflow charts were found.

 Check entry formatting in State blocks in Stateflow charts

Identify missing line breaks between entry action (en), during action (du), and exit action (ex) entries in states. Identify missing line breaks after semicolons (;) in statements.

Passed

All state entries found are correctly formatted.

 Check default transition placement in Stateflow charts

Identify all groupings of states that do not have a default transition or do not have the default state as the top-most state.

Passed

No Stateflow charts and states found that violate the guidelines for default transition placement in Stateflow charts.

 [Check definition of Stateflow data](#)

Identify the Scope value set on Stateflow data defined at machine level.

Passed

All Stateflow data at machine level has been defined as per guideline.

 [Check for MATLAB expressions in Stateflow blocks](#)

Identify MATLAB expressions that are not suitable for code generation in Stateflow blocks.

Passed

No Stateflow objects found using MATLAB expressions unsuitable for code generation.

 [Check for pointers in Stateflow charts](#)

Identify pointer operations on custom code variables.

Note: This check applies only to Stateflow charts that use C as the action language.

Passed

No pointer operations were found.

 [Check Stateflow operators](#)

Error occurred during model compile.

 [Check usage of unary minus operations in Stateflow charts](#)

Error occurred during model compile.

 [Check usage of Stateflow comments](#)

Identify comments that are nested or contain newline(s) in the middle in Stateflow for action language 'C'.

Passed

No comments found that are either nested or contain newline(s) in the middle.

-  Check prohibited comparison operation of logical type signals

Error occurred during model compile.

-  Check usage of internal transitions in Stateflow states

Identify Stateflow states using multiple internal transitions.

Passed

No Stateflow states found with multiple internal transitions

-  Check usage of transition conditions in Stateflow transitions

Identify unconditional Stateflow transitions with higher priority than conditional transitions.

Passed

No unconditional Stateflow transitions found with higher priority than conditional transitions

-  Check uniqueness of Stateflow State and Data names

jc_0732: Distinction between state names, data names, and event names

Identify Stateflow State and Stateflow Data that have identical names in a given chart.

Passed

No Stateflow charts were found.

-  Check uniqueness of State names

jc_0730: Unique state name in Stateflow blocks

Identifies identical State names within a Stateflow Chart.

Passed

No Stateflow charts were found.

-  Check usage of parentheses in Stateflow transitions

jc_0752: Condition action in transition label

Start new line before and after parentheses for condition actions in Stateflow transitions.

Passed

No Stateflow Transitions found that violate the requirement for new line for condition actions.

 **Check prohibited combination of state action and flow chart**

State actions and flow charts should not be combined in states.

Passed

No Stateflow states were found that combine state action and flow chart.

 **Check condition actions and transition actions in Stateflow**

Identify usage of transition actions in Stateflow.

Passed

No Stateflow charts have transition actions.

 **Check usable number for first index**

Identify usage of first index of Stateflow data.

Passed

All Stateflow data first index values are uniform.

 **Check usage of State names**

jc_0731: State name format

Identify state names with '/' at its end.

Passed

No Stateflow states were found.

 **Check execution timing for default transition path**

'Execute (enter) Chart At Initialization' should be set to OFF.

Passed

All Stateflow Charts pass the check.

 [Check repetition of Action types](#)

jc_0734: Number of state action types

Identifies repeated action types in a Stateflow State.

Passed

No Stateflow States were found.

 [Check for unused data in Stateflow Charts](#)

Checks if the model parameter 'Unused data, events, messages and functions' is not set to 'none'.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Unused data, events, messages and functions (SFUnusedDataAndEventsDiag)	warning	error, warning

 [Check updates to variables used in state transition conditions](#)

jc_0741: Timing to update data used in state chart transition conditions

Variables used in state transition conditions must not perform an update by "during" state action type.

Passed

No Stateflow states found that violate the guidelines for updating the variables used in state transition conditions.

 [Check usage of internal transition](#)

Internal transition lines should start from the left edge of the state.

Passed

No Stateflow transitions found that violate the guidelines for starting point of internal transition in Stateflow.

✓ Check usage of parallel states

Substates of parallel states should not be parallel states.

Passed

All Stateflow Charts pass the check.

✓ Check scope of data in parallel states

jc_0722: Local data definition in parallel states

The scope of local variables should be restricted to one parallel state unless it is being used by other parallel states.

Passed

No Stateflow States were found.

✓ Check indentation of code in Stateflow states

Identify non-uniform indentation in Stateflow blocks.

Passed

All Stateflow blocks have uniform indentation.

✓ Check for usage of text inside states

Identify Stateflow states with text exceeding the boundary of the state.

Passed

No Stateflow states found with text exceeding the boundary of the state.

✓ Check for unexpected backtracking in state transitions

Identify configuration parameter settings which identify unexpected backtracking in state transitions.

Passed

All constraints on model configuration parameters have been met.

Status	Parameter	Current Value	Recommended Values
Pass	Unexpected backtracking (SFUnexpectedBacktrackingDiag)	error	error

 [Check for unconnected objects in Stateflow Charts](#)

Identify dangling transitions and unconnected Stateflow States and Junctions in Stateflow Charts.

Passed

No unconnected transitions, states or junctions found in Stateflow Charts.

 [Check position of label string in Stateflow transition](#)

Identify placement of label string in Stateflow transition.

Passed

All Stateflow transitions are placed uniformly.

 [Check Stateflow chart action language](#)

Check if the action language of Stateflow charts is set to 'C'.

Passed

All Stateflow Charts have action language set to 'C'.

 [Check character usage in Stateflow data names](#)

Identify Stateflow data names with invalid characters.

Passed

No invalid characters are used in Stateflow data names.

 [Check length of Stateflow data name](#)

Check if the length of Stateflow data names are within limit.

Passed

All Stateflow data names are valid.

 [Check usage of transitions to external states](#)

Identify transitions ending on external child states.

Passed

No direct transitions found from external state to child state.

 [Check order of state action types](#)

Identify out of order state action types in Stateflow states.

Passed

No Stateflow states found with out of order state action types

 [Check usage of numeric literals in Stateflow](#)

Identify use of numeric literals in Stateflow states and transitions.

Passed

No numeric literals found in Stateflow charts.

 [Check position of comments in transition labels](#)

Identify comments in transition labels that are not positioned uniformly.

Passed

Comments in transition labels are positioned uniformly.

 [Check terminal junctions in Stateflow](#)

Identify usage of terminal junctions in flow charts.

Passed

Multiple terminal junctions were not found.

-  Check for implicit type casting in Stateflow

Error occurred during model compile.

-  Check usage of graphical functions in Stateflow

Check for calls between graphical functions.

Passed

No calls between graphical functions were found.

-  Check if state action type 'exit' is used in the model

Check if state action type 'exit' is used in the model.

Passed

State action type 'exit' is not used in the model.

-  Check for use of C-style comment symbols

Error occurred during model compile.

-  Check usage of unconditional transitions in flow charts

Identify unconditional transitions in flow charts.

Passed

All unconditional transitions adhere to the guideline.

-  Check for comments in unconditional transitions

Identify comments in unconditional transitions without action statements.

Passed

All unconditional transitions without action statements have comments.

-  Check definition of Stateflow events

Stateflow events should be defined at the smallest possible scope of usage.

Passed

All Stateflow events are defined at their smallest scope.

✓ Check Stateflow transition appearance

Identify Stateflow transitions visually overlapping other Stateflow objects.

Passed

No transition violates the guidelines for Stateflow transition appearance.

✓ Check usage of events in Stateflow charts

Identify undirected event broadcasts in Stateflow.

Passed

No instances of undirected event broadcast were found.

✓ Check usage of Simulink functions in Stateflow

Usage of Simulink Functions in Stateflow.

Passed

All Simulink Functions in Stateflow are defined according to the guideline.

✓ Check for exclusive states in state machines

Identify states which are the only substate within a state with OR(exclusive) type decomposition.

Passed

All states with OR(exclusive) type decomposition have more than one substate.

✗ Check usage of floating-point expressions in Stateflow charts

Error occurred during model compile.

 MATLAB Functions  0  1  0  0  3  0

✓ Check input and output settings of MATLAB Functions

Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity, data type, or size properties.

Passed

No MATLAB Functions found in the model or subsystem.

-  Check MATLAB code for global variables

Check for global variables in MATLAB code

Check for global variables in MATLAB code used in MATLAB Function blocks

Passed

No MATLAB Function blocks found

Check for global variables in MATLAB functions defined in Stateflow charts

Passed

No MATLAB functions defined in Stateflow charts found

Check for global variables in called MATLAB functions

Passed

No external MATLAB functions found

-  Check usage of character vector inside MATLAB Function block

Identify usage of strings in MATLAB Function blocks.

Passed

No character vectors found in MATLAB Function block

 Check usage of enumerated values

Error occurred during model compile.