# Model Advisor Report – FinalModel.slx

**Simulink version:** 10.5                                    **Model version:**  1.6

**System:** FinalModel                                         **Current run:** 26-Mar-2022 23:54:02

**Treat as Referenced Model:** off

## Run Summary

| Incomplete | Failed | Warning | Justified | Passed | Not Run | Total |
|---|---|---|---|---|---|---|
| 19 | 18 | 237 | 0 | 489 | 1082 | 1845 |

## 📁 Model Advisor

📁 By Product    ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤683

📁 Embedded Coder    ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤28

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

Not Run

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▤ *Check configuration parameters for generation of inefficient saturation code*

Not Run

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

Not Run

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▤ *Check output types of logic blocks*

Not Run

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▤ *Check the hardware implementation*

Not Run

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⊟ *Identify questionable software environment specifications*
Not Run

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⊟ *Identify questionable code instrumentation (data I/O)*
Not Run

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⊟ *Identify blocks generating inefficient algorithms*
Not Run

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⊟ *Check configuration parameters for MISRA C:2012*
Not Run

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⊟ *Check for blocks not recommended for MISRA C:2012*
Not Run

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⊟ *Check for unsupported block names*
Not Run

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⊟ *Check usage of Assignment blocks*
Not Run

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⊟ *Check for switch case expressions without a default case*
Not Run

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⊟ *Check for missing error ports in AUTOSAR receiver interfaces*
Not Run

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⊟ *Check configuration parameters for secure coding standards*
Not Run

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⊟ *Check for blocks not recommended for secure coding standards*
Not Run

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*Identify questionable subsystem settings*

Not Run

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*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

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*Check optimization settings*

Not Run

_____

*Identify unconnected lines, input ports, and output ports*

Not Run

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*Check root model Inport block specifications*

Not Run

_____

*Check diagnostic settings ignored during accelerated model reference simulation*

Not Run

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*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

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☰ *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

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☰ *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

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⊡ *Check structure parameter usage with bus signals*
Not Run

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⊡ *Check for large number of function arguments from virtual bus across model reference boundary*
Not Run

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⊡ *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

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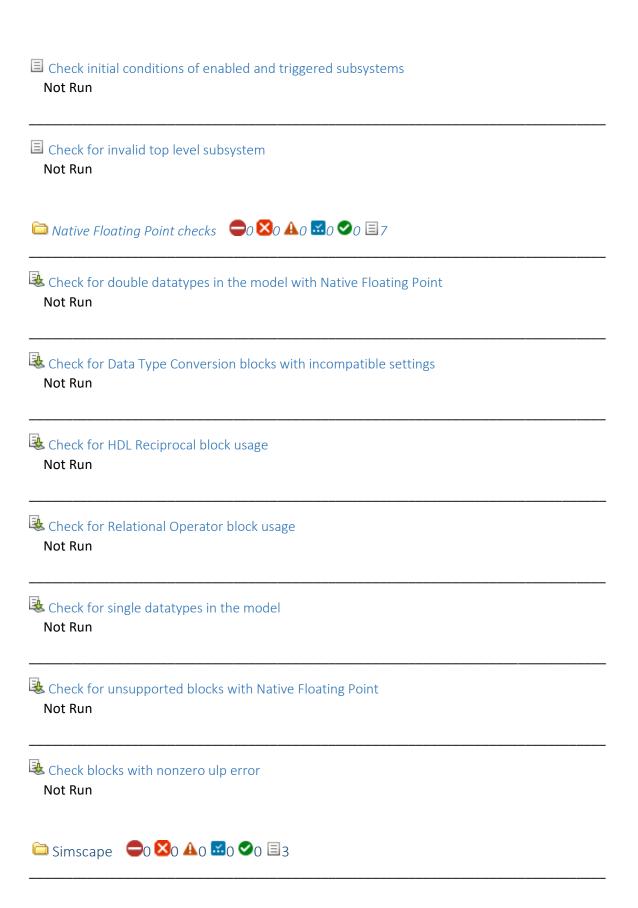⊡ *Identify block output signals with continuous sample time and non-floating point data type*
Not Run

_____

*Check usage of Merge blocks*

Not Run

_____

*Check usage of Outport blocks*

Not Run

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*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

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*Identify automatic unit conversions in the model*

Not Run

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*Identify disallowed unit systems in the model*

Not Run

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*Identify undefined units in the model*

Not Run

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*Identify ambiguous units in the model*

Not Run

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*Identify questionable operations for strict single-precision design*

Not Run

📁 Simulink Coder 🚫0 ❌0 ⚠0 ☑0 ✅0 ☰9

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*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

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*Check for model reference configuration mismatch*

Not Run

---

*Check code generation identifier formats used for model reference*

Not Run

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

Not Run

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*Check reuse of subsystem code*

Not Run

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*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*    ⛔0 ❌0 ⚠️0 ☑️0 ✅0 ▤11

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**Check architecture name**

Not Run

_____

**Check clock settings**

Not Run

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**Check clock, reset, and enable signals**

Not Run

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**Check file extension**

Not Run

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**Check generics**

Not Run

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**Check naming conventions**

Not Run

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**Check package file names**

Not Run

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**Check signal and port names**

Not Run

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▤ Check entity and architecture

    Not Run

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▤ Check module/entity names

    Not Run

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▤ Check top-level subsystem/port names

    Not Run

📁 *Model configuration checks*  ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤6

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▤ Check delay balancing setting

    Not Run

_____

▤ Check for global reset setting for Xilinx and Altera devices

    Not Run

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▤ Check inline configurations setting

    Not Run

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▤ Check for model parameters suited for the HDL code generation

    Not Run

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▤ Check for visualization settings

    Not Run

_____

📥 Check algebraic loops

    Not Run

📁 *Checks for ports and subsystems*  ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤2

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11

▤ Check initial conditions of enabled and triggered subsystems

Not Run

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▤ Check for invalid top level subsystem

Not Run

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📁 *Native Floating Point checks*  ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤7

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⬇ Check for double datatypes in the model with Native Floating Point

Not Run

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⬇ Check for Data Type Conversion blocks with incompatible settings

Not Run

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⬇ Check for HDL Reciprocal block usage

Not Run

_____

⬇ Check for Relational Operator block usage

Not Run

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⬇ Check for single datatypes in the model

Not Run

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⬇ 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

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🗒 *Check consistency of block parameter units*
    Not Run

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🗒 *Check for outdated AC source blocks*
    Not Run

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📥 *Check for dry hydraulic nodes*
    Not Run


📁 Simulink PLC Coder  ⛔0 ❌0 ⚠0 ☒0 ✅0 🗒24


📁 *Industry standard checks*  ⛔0 ❌0 ⚠0 ☒0 ✅0 🗒7

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🗒 Define the names to avoid
    Not Run

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🗒 Define the use of case (capitals)
    Not Run

_____

🗒 Define the maximum variable name length
    Not Run

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🗒 Comments must describe the intention of the code
    Not Run

_____

🗒 Avoid nested comments
    Not Run

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🗒 Define maximum number of input/output/in-out variables of a POU
    Not Run

_____

⬇ Define type prefixes for variables (if used)

    Not Run

📁 *Checks for blocks and block settings* 🚫*0* ❌*0* ⚠*0* ☑*0* ✅*0* 🗒*8*

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📄 Check if model uses event based blocks

    Not Run

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📄 Check if model uses probe blocks

    Not Run

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📄 Check if model uses environment controller blocks

    Not Run

_____

📄 Check Stateflow chart update

    Not Run

_____

📄 Check issues with integrator blocks

    Not Run

_____

📄 Check if model can generate testbench

    Not Run

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📄 Check function packaging configuration

    Not Run

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⬇ Check trigonometric blocks

    Not Run

📁 *Model configuration checks* 🚫*0* ❌*0* ⚠*0* ☑*0* ✅*0* 🗒*9*

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⊟ Check if model uses unsupported blocks
Not Run

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⊟ Check Data Store Memory blocks
Not Run

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⊟ Check model for Stateflow messages
Not Run

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⊟ Check if signal lines are configured properly
Not Run

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⊟ Check if model uses row major algorithms
Not Run

_____

⊟ Check model mask parameters
Not Run

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⊟ Check if model uses machine parented data
Not Run

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⊟ Check if model uses custom code
Not Run

_____

⊟ Check model tunable parameters
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

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▤ Check usage of standardized MATLAB function headers
Not Run

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▤ Check for MATLAB Function interfaces with inherited properties
Not Run

___

▤ Check MATLAB Function metrics
Not Run

___

▤ Check MATLAB Code Analyzer messages
Not Run

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▤ Check if/elseif/else patterns in MATLAB Function blocks
Not Run

___

▤ Check switch statements in MATLAB Function blocks
Not Run

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▤ Check MATLAB functions not supported for code generation
Not Run

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▤ Check state machine type of Stateflow charts
Not Run

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▤ Check Stateflow charts for ordering of states and transitions
Not Run

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▤ Check Stateflow debugging options
Not Run

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▤ 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 Inports with missing properties
Not Run

_____

▤ Check model file name
Not Run

⊟ Check usage of lookup table blocks
Not Run

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

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⊟ 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

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⊟ Check for parameter tunability ignored for referenced models
Not Run

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⊟ Check for disabled and parameterized library links
Not Run

---

⊟ Check safety-related diagnostic settings for data store memory
Not Run

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▤ Check safety-related diagnostic settings for saving

Not Run

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▤ 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

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▤ Check safety-related diagnostic settings for solvers

Not Run

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▤ Check safety-related diagnostic settings for sample time

Not Run

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▤ Check safety-related optimization settings for logic signals

Not Run

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▤ Check safety-related block reduction optimization settings

Not Run

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▤ 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

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▤ Check safety-related diagnostic settings for signal connectivity

Not Run

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▤ Check safety-related diagnostic settings for bus connectivity

Not Run

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▤ 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

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▨ Display model version information

Not Run

_____

▨ Check usage of relational operators in MATLAB Function blocks

Not Run

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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 Inports 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 ✅0
📄97

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📄 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

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📄 Check Stateflow charts for ordering of states and transitions
    Not Run

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▤ Check Stateflow debugging options

Not Run

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

Not Run

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▤ Check for inappropriate use of transition paths

Not Run

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▤ Check naming of ports in Stateflow charts

Not Run

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▤ Check scoping of Stateflow data objects

Not Run

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▤ 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

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▤ Check for inconsistent vector indexing methods

Not Run

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▤ Check usage of variant blocks

Not Run

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▤ Check for root Inports with missing properties
Not Run

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▤ Check model file name
Not Run

_____

▤ Check usage of lookup table blocks
Not Run

_____

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

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▤ 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

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🗐 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

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🗐 Check safety-related block reduction optimization settings

Not Run

_____

🗐 Check safety-related optimization settings for application lifespan

Not Run

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▤ Check safety-related optimization settings for data initialization
Not Run

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▤ 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

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▤ Check safety-related code generation interface settings
Not Run

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▤ 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

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⊟ 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

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⊟ Check safety-related diagnostic settings for model referencing
Not Run

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⊟ Check safety-related diagnostic settings for Stateflow
Not Run

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⊟ Check safety-related diagnostic settings for signal data
Not Run

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⊟ Check safety-related diagnostic settings for variants
Not Run

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⊟ Display model metrics and complexity report
Not Run

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⊟ Check for unconnected objects
Not Run

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⬛ Check usage of relational operators in MATLAB Function blocks
Not Run

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⬛ Check usage of logical operators and functions in MATLAB Function blocks
Not Run

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⬛ 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 Inports with missing range definitions

Not Run

_____

![icon] Check for root Outports with missing range definitions
    Not Run

_____

![icon] Check usage of Assignment blocks
    Not Run

_____

![icon] Check model object names
    Not Run

_____

![icon] Check usage of Signal Routing blocks
    Not Run

_____

![icon] Check for length of user-defined object names
    Not Run

_____

![icon] Check data type of loop control variables
    Not Run

_____

![icon] Check usage of bit-shift operations
    Not Run

_____

![icon] Display configuration management data
    Not Run

_____

![icon] Check usage of recursions
    Not Run

_____

![icon] Check usage of remainder and reciprocal operations
    Not Run

_____

![icon] Check usage of square root operations
    Not Run

33

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**Check usage of log and log10 operations**
Not Run

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**Check usage of Reciprocal Sqrt blocks**
Not Run

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**Check for divide-by-zero calculations**
Not Run

---

**Check for unreachable and dead code**
Not Run

## MAB Checks  ⊖0  ❌0  ⚠0  ☒0  ✅0  ☰142

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**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

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▤ 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

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▤ Check for pointers in Stateflow charts

Not Run

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▤ 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

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▤ Check MATLAB code for global variables
Not Run

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▤ 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 Inport 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 Inport 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

55

---

📄 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*  🚫0 ❌0 ⚠0 ☑0 ✅0 ▤10

---

▤ 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

📁 Simulink Code Inspector ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤67

_____

▤ *Check code generation settings*
Not Run

_____

▤ *Check data import and export settings*
Not Run

_____

▤ *Check diagnostic settings*
Not Run

_____

▤ *Check hardware implementation settings*
Not Run

_____

▤ *Check math and data types settings*
Not Run

_____

▤ *Check solver settings*
Not Run

_____

▤ *Check for unsupported blocks*
Not Run

_____

▤ *Check for unconnected objects in the model*
Not Run

_____

▤ *Check system target file setting*
Not Run

_____

▤ *Check function specification setting*
Not Run

_____

📄 *Check for Stateflow machine data*

Not Run

_____

📄 *Check for Stateflow machine events*

Not Run

_____

📄 *Check the code generation folder structure for the model*

Not Run

_____

📄 *Check for unsupported Code Mapping settings*

Not Run

_____

📄 *Check model arguments for storage classes*

Not Run

_____

📄 *Check usage of Code in MATLAB Functions*

Not Run

_____

📄 *Check MATLAB Code Analyzer messages*

Not Run

_____

📄 *Check storage class for workspace variables*

Not Run

_____

📄 *Check for unsupported Signal Conversion blocks automatically inserted at signals entering block input ports*

Not Run

_____

📄 *Check for usage of fixed-point instrumentation*

Not Run

_____

61

*Check for usage of synthesized local data stores*

Not Run

_____

*Check Loop unrolling threshold setting*

Not Run

_____

*Check usage of global data stores*

Not Run

_____

*Check global data stores' name shadow*

Not Run

_____

*Check destinations of If and Switchcase blocks*

Not Run

_____

*Check for root Outport blocks that have non-auto storage class*

Not Run

_____

*Check for Terminator blocks that connect to Model block outports*

Not Run

_____

*Check for unsupported propagation of initial condition values*

Not Run

_____

*Check data type replacement names*

Not Run

_____

*Check for multiple sample times in model used as a model reference target*

Not Run

_____

*Check GetSet storage class for workspace variables*

Not Run

_____

📥 *Check Treat each discrete rate as a separate task setting*

    Not Run

_____

📥 *Check model for commented out blocks*

    Not Run

_____

📥 *Check model for void_void subsystems that use the same function name*

    Not Run

_____

📥 *Check n-D Lookup Table blocks for incompatible breakpoint data type*

    Not Run

_____

📥 *Check model for reusable subsystems that use the same function interfaces*

    Not Run

_____

📥 *Check for usage of shared synthesized local data stores*

    Not Run

_____

📥 *Check model for compiled and graphical block sorted order*

    Not Run

_____

📥 *Check usage of Sources blocks*

    Not Run

_____

📥 *Check usage of Signal Routing blocks*

    Not Run

_____

📥 *Check usage of Math Operations blocks*

    Not Run

_____

63

*Check usage of Signal Attributes blocks*

Not Run

_____

*Check usage of Logical and Bit Operations blocks*

Not Run

_____

*Check usage of Lookup Tables blocks*

Not Run

_____

*Check usage of User-Defined Function blocks*

Not Run

_____

*Check usage of Ports and Subsystems blocks*

Not Run

_____

*Check usage of Discontinuities blocks*

Not Run

_____

*Check usage of Sinks blocks*

Not Run

_____

*Check usage of Discrete blocks*

Not Run

_____

*Check usage of Stateflow blocks*

Not Run

_____

*Check usage of String blocks*

Not Run

_____

*Check usage of Stateflow charts*

Not Run

_____

*Check usage of Stateflow MATLAB action language*

Not Run

_____

*Check usage of Stateflow transitions*

Not Run

_____

*Check usage of Stateflow junctions*

Not Run

_____

*Check usage of Stateflow data*

Not Run

_____

*Check usage of Stateflow events*

Not Run

_____

*Check usage of Stateflow states*

Not Run

_____

*Check usage of Stateflow graphical functions*

Not Run

_____

*Check usage of Stateflow truth tables*

Not Run

_____

*Check usage of MATLAB Function Blocks*

Not Run

_____

*Check usage of Data in MATLAB Functions*

Not Run

_____

*📥 Check usage of root Outport blocks*

Not Run

_____

*📥 Check usage of buses*

Not Run

_____

*📥 Check usage of shared utilities*

Not Run

_____

*📥 Check for sample times in the model*

Not Run

_____

*📥 Check conditional input branch execution setting*

Not Run


📁 Simulink Design Verifier   ⛔0 ❌0 ⚠0 ☑0 ✅0 📄14


📁 *Design Error Detection*   ⛔*0* ❌*0* ⚠*0* ☑*0* ✅*0* 📄*13*

_____

📥 Detect Dead Logic

Not Run

_____

📥 Detect Out Of Bound Array Access

Not Run

_____

📥 Detect Division By Zero

Not Run

_____

📥 Detect Integer Overflow

Not Run

_____


66

🔧 Detect Non-finite and NaN Floating-point Values

   Not Run

_____

🔧 Detect Subnormal Floating-point Values

   Not Run

_____

🔧 Detect Specified Minimum and Maximum Value Violations

   Not Run

_____

🔧 Detect Data Store Access Violations

   Not Run

_____

🔧 Detect Block Input Range Violations

   Not Run

_____

🔧 Detect Usage of remainder and reciprocal operations - hisl_0002

   Not Run

_____

🔧 Detect Usage of square root operations - hisl_0003

   Not Run

_____

🔧 Detect Usage of log and log10 operations - hisl_0004

   Not Run

_____

🔧 Detect Usage of Reciprocal Square Root Blocks - hisl_0028

   Not Run

_____

🔧 *Check compatibility with Simulink Design Verifier*

   Not Run


📁 Simulink Control Design   ⛔0 ❌0 ⚠0 🔲0 ✅0 ▤1

_____

*Identify time-varying source blocks interfering with frequency response estimation*
Not Run


📁 By Task 🚫19 ❌18 ⚠️237 ☑️0 ✅489 📋399


📁 Modeling Physical Systems 🚫0 ❌0 ⚠️0 ☑️0 ✅1 📋1
_____

✅ *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*
Not Run


📁 Replacing Blocks That Will Be Removed 🚫0 ❌0 ⚠️0 ☑️0 ✅1 📋0
_____

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


**Passed**
The model does not contain any Environment Controller blocks.


📁 Simulink PLC Coder 🚫1 ❌1 ⚠️3 ☑️0 ✅16 📋3


📁 *Model configuration checks* 🚫*0* ❌*1* ⚠️*0* ☑️*0* ✅*6* 📋*1*
_____

✅ Check Data Store Memory blocks
Lists all the Data Store Memory blocks which do not resolve to Simulink signal
**Passed**

_____

_____

✅ Check model for Stateflow messages

Checks if model uses any Stateflow messages

**Passed**

_____

_____

✅ Check if signal lines are configured properly

Lists all the signal lines that are not compatible with Simulink PLC Coder

**Passed**

_____

_____

✅ Check if model uses row major algorithms

Checks if model uses row major algorithms

**Passed**

_____

_____

❌ Check model mask parameters

Lists all the mask parameters which have Inf elements

**Warning**

Following mask parameters which have Inf elements

- The Subsystem block 'FinalModel/Background input' mask parameter 'Ts' has 'inf' value. This is not supported for PLC Code generation.

- The Subsystem block 'FinalModel/Subject input' mask parameter 'Ts' has 'inf' value. This is not supported for PLC Code generation.

**Recommended Action**

Check the mask parameter settings

_____

_____

69

✅ Check if model uses machine parented data

Lists all the blocks/events that use machine parented data

**Passed**

_____

_____

✅ Check if model uses custom code

Checks if model uses custom code

**Passed**

_____

_____

📥 Check model tunable parameters

Not Run

📁 *Checks for blocks and block settings* ⛔1 ❌0 ⚠0 ☑0 ✅7 📄1

_____

✅ Check if model uses event based blocks

Lists all the event based blocks that are not compatible with Simulink PLC Coder

**Passed**

_____

_____

✅ Check if model uses probe blocks

Lists all the probe blocks that are not compatible with Simulink PLC Coder

**Passed**

_____

_____

✅ Check if model uses environment controller blocks

Lists all the environment controller blocks that are not compatible with Simulink PLC Coder

**Passed**

_____

_____

✅ Check Stateflow chart update

Lists all the Stateflow charts that are not compatible with Simulink PLC Coder

**Passed**

_____

_____

✅ Check issues with integrator blocks

Lists all the discrete integrator blocks that have incompatible initial conditions
**Passed**

_____

_____

✅ Check if model uses unsupported blocks

Lists all the blocks that are not compatible with Simulink PLC Coder
**Passed**

_____

_____

⛔ Check if model can generate testbench


Abnormal exit: Unrecognized function or variable 'hasTB'.


_____

✅ Check function packaging configuration

Checks if subsystems are set to generate reusable functions
**Passed**

_____

_____

📥 Check trigonometric blocks

Not Run


📁 *Industry standard checks*   ⛔0 ❌0 ⚠3 ☑0 ✅3 📄1

_____

⚠ Define the names to avoid


Names defined as keywords must not be used

**Warning**
This check is not intended for the root level of the model

**Recommended Action**
Run this check for the subsystem level

_____


71

| Name | Value |
|------|-------|
| Open Keywords File | N/A |

_____

⚠ Define the use of case (capitals)

The use of capital letters in object names must be clear and consistent across the project

**Warning**
This check is not intended for the root level of the model

**Recommended Action**
Run this check for the subsystem level

_____

Input Parameters Selection

| Name | Value |
|------|-------|
|  | alllowercase |
| Ignore prefix | false |

_____

⚠ Define the maximum variable name length

Names that exceed the defined maximum name length must be avoided

**Warning**
This check is not intended for the root level of the model

**Recommended Action**
Run this check for the subsystem level

_____

Input Parameters Selection

| Name | Value |
|------|-------|
| Maximum acceptable length | 32 |

_____

✅ Comments must describe the intention of the code

Check if function blocks have comments

**Warning**
This check is not intended for the root level of the model

**Recommended Action**
Run this check for the subsystem level

_____

_____

✅ Avoid nested comments

Nesting of multiline comments must be avoided

**Warning**
This check is not intended for the root level of the model

**Recommended Action**
Run this check for the subsystem level

_____

_____

✅ Define maximum number of input/output/in-out variables of a POU

The number of input variables, output variables, and in-out variables of a POU should be within a limited set

**Warning**
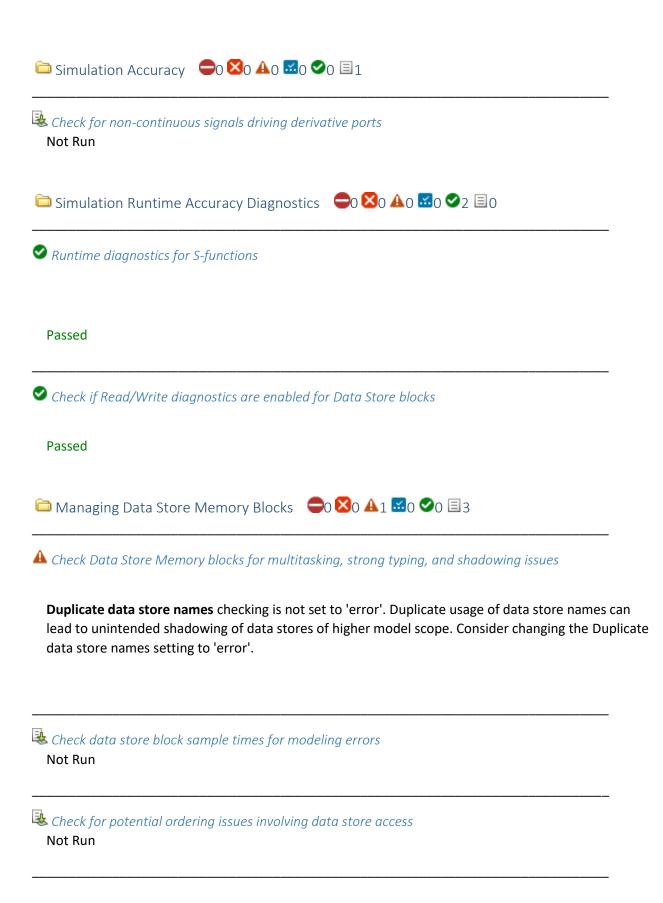This check is not intended for the root level of the model

**Recommended Action**
Run this check for the subsystem level

_____

Input Parameters Selection

| Name | Value |
|---|---|
| Maximum number of I/O variables | 20 |

_____

Define type prefixes for variables (if used)
Not Run

📁 Simulation Accuracy  ⛔0 ❌0 ⚠️0 ☑️0 ✅0 ☰1

_____

📥 *Check for non-continuous signals driving derivative ports*
    Not Run

📁 Simulation Runtime Accuracy Diagnostics  ⛔0 ❌0 ⚠️0 ☑️0 ✅2 ☰0

_____

✅ *Runtime diagnostics for S-functions*

    Passed

_____

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

    Passed

📁 Managing Data Store Memory Blocks  ⛔0 ❌0 ⚠️1 ☑️0 ✅0 ☰3

_____

⚠️ *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*
    Not Run

_____

📥 *Check for potential ordering issues involving data store access*
    Not Run

_____

📥 *Check for relative execution order change for Data Store Read and Data Store Write blocks*
Not Run


📁 Simulink Model File Integrity   ⛔0 ❌0 ⚠️0 ☑️0 ✅1 🗒️0

_____

✅ *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.
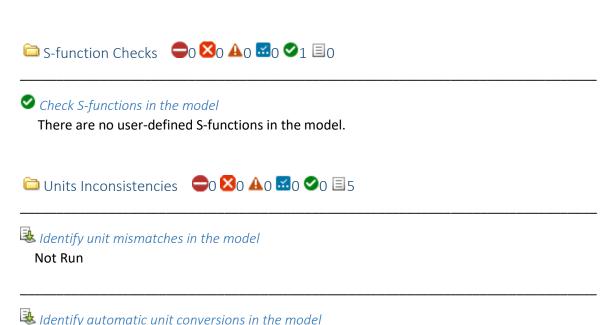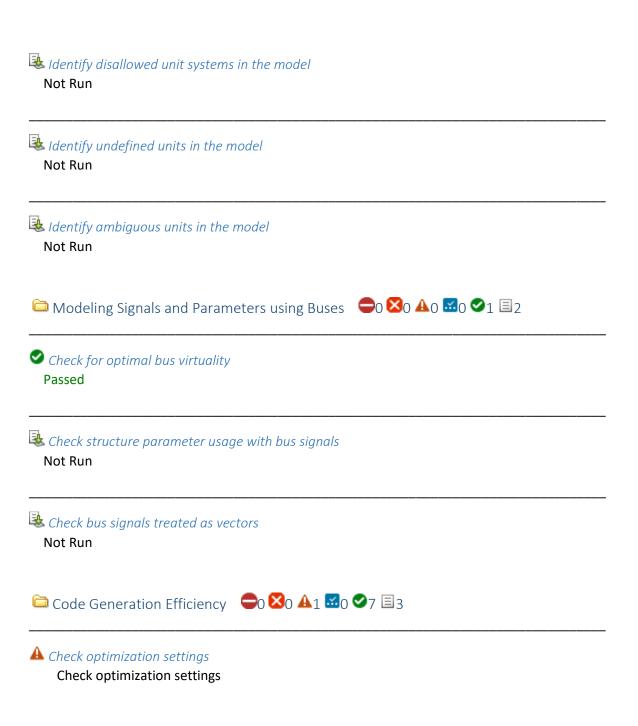
 **Passed**
This model uses the default value for property ModifiedDateFormat.

 **Passed**
This model uses the default value for property ModelVersionFormat.


📁 S-function Checks   ⛔0 ❌0 ⚠️0 ☑️0 ✅1 🗒️0

_____

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


📁 Units Inconsistencies   ⛔0 ❌0 ⚠️0 ☑️0 ✅0 🗒️5

_____

📥 *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

📁 Modeling Signals and Parameters using Buses  ⛔0 ❌0 ⚠0 ☑0 ✅1 ▤2

_____

✅ *Check for optimal bus virtuality*
Passed

_____

*Check structure parameter usage with bus signals*
Not Run

_____

*Check bus signals treated as vectors*
Not Run

📁 Code Generation Efficiency  ⛔0 ❌0 ⚠1 ☑0 ✅7 ▤3

_____

⚠ *Check optimization settings*
  Check optimization settings

**Warning**

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

76

| Status | Parameter | Current Value | Recommended Values |
|---|---|---|---|
| Warning | Use bitsets for storing state configuration (StateBitsets) | off | on |
| Warning | Use bitsets for storing Boolean data (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*
**Passed**

_____

✅ *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**
There are no logic blocks in the model or subsystem.

_____

✅ *Check configuration parameters for generation of inefficient saturation code*
   **Passed**

_____

📥 *Identify blocks that generate expensive rounding code*
   Not Run

_____

📥 *Identify questionable fixed-point operations*
   Not Run

_____

📥 *Identify blocks that generate expensive fixed-point and saturation code*
   Not Run

_____

✅ *Identify blocks generating inefficient algorithms*
   **Passed**
   No inefficient algorithms found in the model.

📁 Modeling Single-Precision Systems  ⛔0 ❌0 ⚠0 📊0 ✅0 📄1

_____

📥 *Identify questionable operations for strict single-precision design*
   Not Run

📁 Migrating to Simplified Initialization mode  ⛔0 ❌0 ⚠0 📊0 ✅0 📄4

_____

📥 *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


📁 Row-Major Code Generation    ⛔0 ❌0 ⚠️0 🔲0 ✅1 📄2
_____

✅ *Identify blocks generating inefficient algorithms*
   **Passed**
No inefficient algorithms found in the model.

_____

📥 *Check for blocks not supported for row-major code generation*
Not Run

_____

📥 *Identify TLC S-Functions with unset array layout*
Not Run


📁 Model Referencing    ⛔0 ❌0 ⚠️0 🔲0 ✅6 📄2
_____

✅ *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*


79

Passed

_____

📋 *Check bus signals treated as vectors*
Not Run

_____

✅ *Check root model Inport block specifications*
Passed

_____

📋 *Check for large number of function arguments from virtual bus across model reference boundary*
Not Run

📁 Managing Library Links And Variants   ⛔0 ❌0 ⚠0 ☑0 ✅4 ▤0
_____

✅ *Identify disabled library links*
   **Passed**

_____

✅ *Identify parameterized library links*
Passed

_____

✅ *Identify unresolved library links*
Passed

_____

✅ *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 ❌0 ⚠0 ☑0 ✅0 ▤1
_____

📋 *Check Delay, Unit Delay and Zero-Order Hold blocks for rate transition*
Not Run

📁 Modeling Standards for MISRA C:2012 🚫0 ❌0 ⚠️1 ☑️0 ✅6 ☰6

_____

⚠️ *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 | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |

| | | | | |
|---|---|---|---|---|
| Warning | MAT-file logging (MatFileLogging) | on | off | |
| Warning | ParenthesesLevel | *Prerequisite constraint not met.* | Standards, Maximum | SystemTargetFile |
| Warning | CastingMode | *Prerequisite constraint not met.* | Standards | SystemTargetFile |
| Warning | InternalIdentifier | *Prerequisite constraint not met.* | Shortened | SystemTargetFile |
| Warning | Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation) | off | on, UseDivisionForReciprocalsOfIntegersOnly | |
| Warning | EnableSignedLeftShifts | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | EnableSignedRightShifts | *Prerequisite constraint not met.* | 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 | |

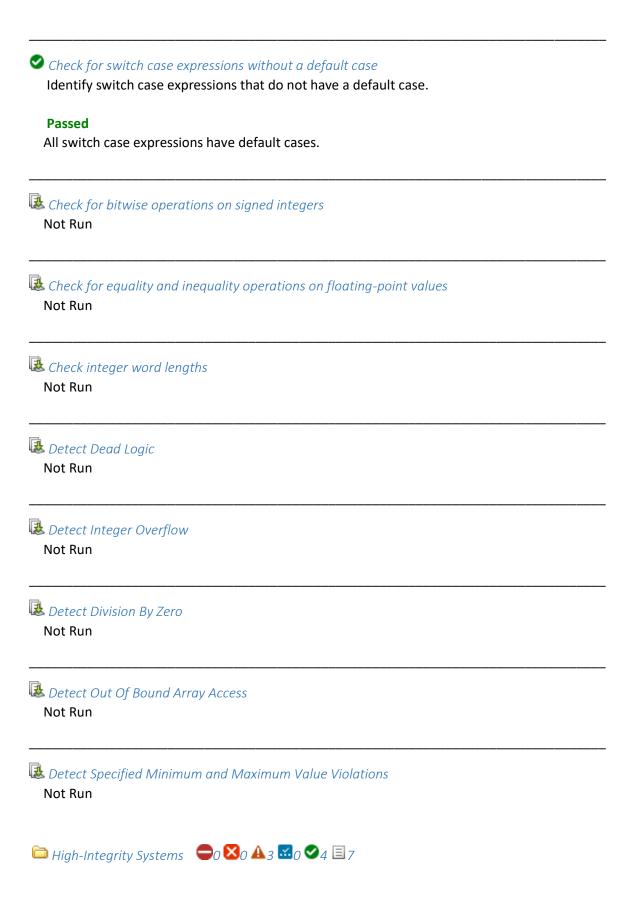| | | | | |
|---|---|---|---|---|
| Warning | Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion) | on | off | |
| Warning | MATLABFcnDesc | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (InstructionSetExtensions) | SSE2 | None | |

∧ Less

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

_____

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

_____

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

_____

✅ *Check for unsupported block names*
**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 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*
Not Run

_____

*Check for recursive function calls*
Not Run

_____

*Check for equality and inequality operations on floating-point values*
Not Run

_____

*Check for missing const qualifiers in model functions*
Not Run

_____

*Check integer word lengths*
Not Run

_____

*Check bus object names that are used as bus element names*
Not Run


📁 Modeling Standards for Secure Coding (CERT C, CWE, ISO/IEC TS 17961)  🚫0 ❌0 ⚠4 ☑0
✅8 📋15

_____

⚠ *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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | MAT-file logging (MatFileLogging) | on | off | |
| Warning | EnableSignedLeftShifts | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | EnableSignedRightShifts | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |

∧ Less

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

_____

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

_____

✅ *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*

Not Run

_____

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

Not Run

_____

📥 *Check integer word lengths*

Not Run

_____

📥 *Detect Dead Logic*

Not Run

_____

📥 *Detect Integer Overflow*

Not Run

_____

📥 *Detect Division By Zero*

Not Run

_____

📥 *Detect Out Of Bound Array Access*

Not Run

_____

📥 *Detect Specified Minimum and Maximum Value Violations*

Not Run

📁 *High-Integrity Systems*  ⛔0 ❌0 ⚠3 🔲0 ✅4 ☰7

87

📁 Simulink  ⛔0 ❌0 ⚠0 ☑0 ✅3 📄6

---

📥 Check usage of Abs blocks
   Not Run

---

📥 Check usage of remainder and reciprocal operations
   Not Run

---

📥 Check usage of log and log10 operations
   Not Run

---

✅ 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.

   **Passed**
   No blocks found which are not recommended for C/C++ production code deployment.

---

📥 Check data types for blocks with index signals
   Not Run

---

📥 Check usage of Reciprocal Sqrt blocks
   Not Run

---

✅ 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

Not Run

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 | Remove code from floating-point to integer conversions that wraps out-of-range values (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.

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | NoFixptDivByZeroProtection | *Prerequisite constraint not met.* | off | SystemTargetFile |

**Recommended Action**

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

📁 Naming  ⛔0 ❌0 ⚠0 ☒0 ✅1 ▤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
Not Run

📁 Code  ⛔0 ❌0 ⚠1 ☒0 ✅0 ▤0
_____

90

⚠ 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 | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | MAT-file logging (MatFileLogging) | on | off | |

| | | | | |
|---|---|---|---|---|
| Warning | ParenthesesLevel | *Prerequisite constraint not met.* | Standards, Maximum | SystemTargetFile |
| Warning | CastingMode | *Prerequisite constraint not met.* | Standards | SystemTargetFile |
| Warning | InternalIdentifier | *Prerequisite constraint not met.* | Shortened | SystemTargetFile |
| Warning | Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation) | off | on, UseDivisionForReciprocalsOfIntegersOnly | |
| Warning | EnableSignedLeftShifts | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | EnableSignedRightShifts | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (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.
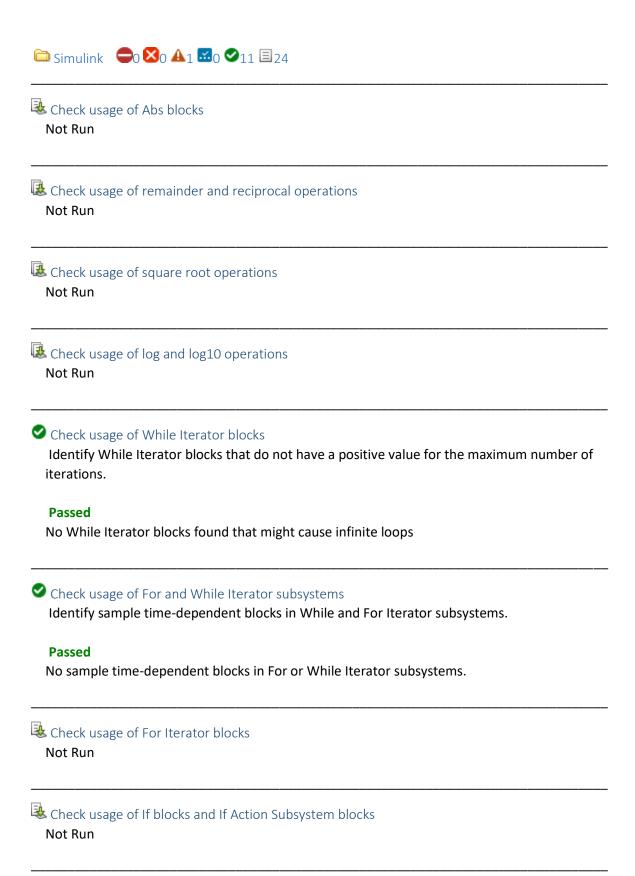
   **Recommended Action**
   Click the link below to close the Model Advisor and open the Upgrade Advisor for FinalModel.
   Open the Upgrade Advisor

📁 Modeling Standards for DO-178C/DO-331   ⛔1 ❌0 ⚠31 ☑0 ✅33 🗒34

_____

📥 *Display model version information*
   Not Run

📁 *High-Integrity Systems*   ⛔*1* ❌*0* ⚠*31* ☑*0* ✅*31* 🗒*33*

📁 Simulink  ⛔0 ❌0 ⚠️1 ☑️0 ✅11 ▤24

_____

📥 Check usage of Abs blocks

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 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

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 usage of Merge blocks

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 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.

**Passed**
No blocks found which are not recommended for C/C++ production code deployment.

_____

✅ 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

Not Run

_____

✔ 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

Not Run

_____

✔ Check for root Inports with missing properties

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

**Passed**

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

_____

⊞ Check for root Inports with missing range definitions

Not Run

_____

⊞ Check for root Outports with missing range definitions

Not Run

_____

⊞ Check usage of Reciprocal Sqrt blocks

Not Run

96

---

📥 Check usage of Assignment blocks

    Not Run

---

✅ 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.

    **Passed**

    No Gain blocks found with value which resolves to 1.

---

📥 Check for length of user-defined object names

    Not Run

---

📥 Check data type of loop control variables

    Not Run

---

📥 Check for divide-by-zero calculations

    Not Run

---

✅ 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

    Not Run

---

⚠ 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.

**Passed**

No blocks found that have disabled or parameterized library links.

_____

📥 Check for unreachable and dead code

Not Run

_____

📁 Stateflow  ⛔0 ❌0 ⚠1 ☑0 ✅7 ▤4

_____

✅ 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

Not Run

_____

⚠️ 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
Not Run

_____

✅ 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

Not Run

_____

📥 Check Stateflow charts for unary operators

Not Run

📁 MATLAB ⛔0 ❌0 ⚠️4 🔲0 ✅3 ▤4

_____

⚠️ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

**Warning**

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... |

**Recommended Action**

Ensure that the function has standard function header.

_____ Identify usage of standardized function headers in MATLAB function.

**Warning**

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function [BW,maskedRGBImage] = createMask(RGB)... |

**Recommended Action**

Ensure that the function header has a function description.

_____

⚠ Check for MATLAB Function interfaces with inherited properties

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

**Warning**

The following MATLAB Functions have interfaces of data type property set to 'Inherit: Same as Simulink' or 'Inherit: From definition in chart':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change data type of identified data objects from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit data type.

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

The following MATLAB Functions have interfaces of complexity property set to 'Inherited':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change complexity of identified data objects from 'Inherited' to 'On' or 'Off'.

_____

⚠ Check MATLAB Function metrics
   Identify MATLAB Functions that violate code and complexity metrics.

The following MATLAB Function blocks were found to violate code and complexity metrics:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... | Density of Comments = 0.17391. Density of Comments should be greater than 0.2. |

**Recommended Action**

Remodel the functions to meet the set code and complexity metrics

_____

⚠ Check MATLAB Code Analyzer messages

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

**Warning**

The following MATLAB Function blocks were found with Code Analyzer warnings, missing %#codegen directive or inappropriate usage of justification message IDs:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | ASGLU : The value assigned here to 'b' appears to be unused. Consider replacing it by ~. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | gm=bg; | NASGU : The value assigned to variable 'gm' might be unused. |

**Recommended Action**

Consider correcting the above mentioned warnings -

- Implement MATLAB Code Analyzer recommendations

- Justify code line with %#ok comment

- Specify justification by adding message id to %#ok comment

- For MATLAB Function files, add %#codegen directive, if missing

_____

### ✅ 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
Not Run

_____

### Check usage of logical operators and functions in MATLAB Function blocks
Not Run

_____

### Check type and size of condition expressions
Not Run

_____

### ✅ 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
Not Run

📁 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 |
|--------|-----------|---------------|--------------------|----------------|

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Show eliminated blocks (ShowEliminatedStatement) | off | on | GenerateComments |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | Verbose comments for 'Model default' storage class (ForceParamTrailComments) | off | on | GenerateComments |
| Warning | ReqsInCode | *Prerequisite constraint not met.* | 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 | Support non-finite numbers (SupportNonFinite) | on | off | |
| Warning | SupportAbsoluteTime | *Prerequisite constraint not met.* | off | SystemTargetFile |

| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
|---------|----------------------|-----------------------------------|-----|------------------|
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | IncludeMdlTerminateFcn | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SuppressErrorStatus | *Prerequisite constraint not met.* | on | SystemTargetFile |
| Warning | MAT-file logging (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 |

| Status | Parameter | Current Value | Recommended Values |
|---|---|---|---|
| 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.

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 | _Prerequisite constraint not met._ | Maximum, Standards | SystemTargetFile |

| Warning | PreserveExpressionOrder | *Prerequisite constraint not met.* | on | SystemTargetFile |
|---|---|---|---|---|
| D - Warning | System target file (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.

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | | |
| Warning | MangleLength | *Prerequisite constraint not met.* | | 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.

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | ZeroExternalMemoryAtStartup* | *Prerequisite constraint not met.* | on | SystemTargetFile, CodeInterfacePackaging |
| Warning | ZeroInternalMemoryAtStartup* | *Prerequisite constraint not met.* | 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 | Remove code from floating-point to integer conversions that wraps out-of-range values (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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | NoFixptDivByZeroProtection | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (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.

119

**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.

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 |
|---|---|---|---|

| 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.

<span style="color:orange">**Warning**</span>
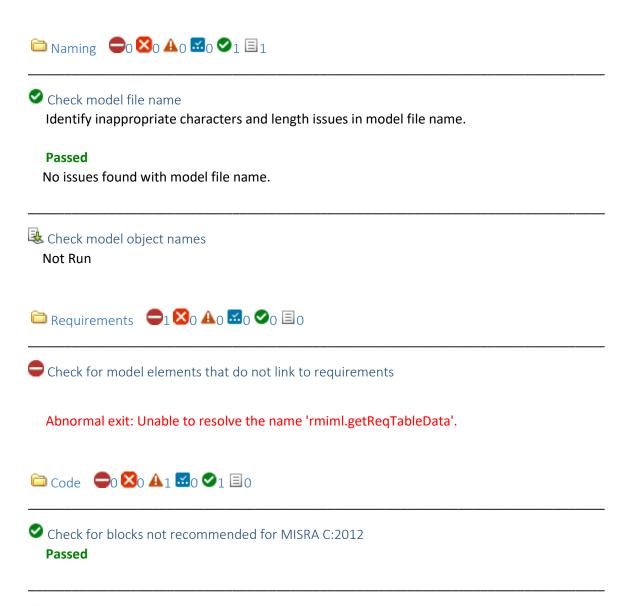
The model configuration parameters are not set to the recommended values specified in the data file.

| 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.

_____

124

✅ 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 |

| Status | Parameter | Current Value | Recommended Values |
|---|---|---|---|
| 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 Inport/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.

📁 Naming  ⛔0 ❌0 ⚠0 📊0 ✅1 📄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

Not Run

📁 Requirements  ⛔1 ❌0 ⚠0 📊0 ✅0 📄0

_____

⛔ Check for model elements that do not link to requirements

Abnormal exit: Unable to resolve the name 'rmiml.getReqTableData'.

📁 Code  ⛔0 ❌0 ⚠1 📊0 ✅1 📄0

_____

✅ 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.

129

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Model Verification block enabling (AssertControl) | UseLocalSettings | DisableAll | |
| D - Warning | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | MAT-file logging (MatFileLogging) | on | off | |
| Warning | ParenthesesLevel | *Prerequisite constraint not met.* | Standards, Maximum | SystemTargetFile |
| Warning | CastingMode | *Prerequisite constraint not met.* | Standards | SystemTargetFile |
| Warning | InternalIdentifier | *Prerequisite constraint not met.* | Shortened | SystemTargetFile |
| Warning | Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation) | off | on, UseDivisionForReciprocalsOfIntegersOnly | |

| Warning | EnableSignedLeftShifts | *Prerequisite constraint not met.* | off | SystemTargetFile |
|---|---|---|---|---|
| Warning | EnableSignedRightShifts | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (InstructionSetExtensions) | SSE2 | None | |

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131

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

📁 *Simulink*  ⛔0 ❌0 ⚠0 ☑0 ✅1 📄0

_____

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

  **Passed**
  There are no unconnected lines, input ports, and output ports in this model.

📁 *Library Links*  ⛔0 ❌0 ⚠0 ☑0 ✅1 📄0

_____

✅ Identify unresolved library links
  Passed

📁 Modeling Standards for DO-254  ⛔12 ❌0 ⚠17 ☑0 ✅30 📄29

_____

📥 *Display model version information*
  Not Run

📁 *High-Integrity Systems*  ⛔1 ❌0 ⚠13 ☑0 ✅18 📄18

📁 Simulink  ⛔0 ❌0 ⚠1 ☑0 ✅6 📄13

_____

📥 Check usage of Abs blocks
  Not Run

_____

📥 Check usage of conditionally executed subsystems
  Not Run

_____

132

⬛ 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 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

   Not Run

_____

✅ Check for root Inports with missing properties

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

   **Passed**

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

_____

⬛ Check for root Inports with missing range definitions

   Not Run

_____

⬛ Check for root Outports with missing range definitions

   Not Run

133

_____

📥 Check usage of Assignment blocks

   Not Run

_____

✅ 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.

   **Passed**

   No Gain blocks found with value which resolves to 1.

_____

📥 Check for length of user-defined object names

   Not Run

_____

📥 Check data type of loop control variables

   Not Run

_____

✅ 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

   Not Run

_____

⚠️ Check safety-related diagnostic settings for variants

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

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.

**Passed**
No blocks found that have disabled or parameterized library links.

📁 Stateflow  🚫0 ❌0 ⚠1 ☑0 ✅6 📄2
_____

✅ 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
Not Run

_____

⚠ 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.

_____

136

✅ 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

Not Run


📁 MATLAB  ⛔0 ❌0 ⚠2 ⊠0 ✅3 ▤2

_____

⚠ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.


**Warning**


The following MATLAB functions use non-standard function headers:


| Block Path | Expression |
| --- | --- |

| | |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... |

**Recommended Action**

Ensure that the function has standard function header.

_____        Identify usage of standardized function headers in MATLAB function.

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function [BW,maskedRGBImage] = createMask(RGB)... |

**Recommended Action**

Ensure that the function header has a function description.

_____

⚠ Check MATLAB Code Analyzer messages

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

138

The following MATLAB Function blocks were found with Code Analyzer warnings, missing %#codegen directive or inappropriate usage of justification message IDs:

| Block Path | Expression | Description |
| --- | --- | --- |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | ASGLU : The value assigned here to 'b' appears to be unused. Consider replacing it by ~. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | gm=bg; | NASGU : The value assigned to variable 'gm' might be unused. |

**Recommended Action**

Consider correcting the above mentioned warnings -

- Implement MATLAB Code Analyzer recommendations

- Justify code line with %#ok comment

- Specify justification by adding message id to %#ok comment

- For MATLAB Function files, add %#codegen directive, if missing

_____

 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.

_____

139

✅ 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

Not Run

_____

📥 Check usage of logical operators and functions in MATLAB Function blocks

Not Run

_____

✅ 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 |

| | Block diagram contains parameterized library links (SaveWithParameterizedLinksMsg) | warning | error |
|---|---|---|---|
| Warning | | | |

**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.

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 |

| Status | Parameter | Current Value | Recommended Values |
|---|---|---|---|
| Warning | Invalid root Inport/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 |

148

| 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 ❌0 ⚠0 ☑0 ✅1 📄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
Not Run

📁 Requirements ⛔1 ❌0 ⚠0 ☑0 ✅0 📄0
_____

⛔ Check for model elements that do not link to requirements

Abnormal exit: Unable to resolve the name 'rmiml.getReqTableData'.

📁 *Library Links* ⛔0 ❌0 ⚠0 ☑0 ✅1 📄0
_____

✅ Identify unresolved library links
   Passed


📁 *HDL Coder*  ⛔11 ❌0 ⚠️4 🔲0 ✅11 ▤10

📁 Checks for blocks and block settings  ⛔1 ❌0 ⚠️1 🔲0 ✅6 ▤1
_____

✅ Check for HDL Reciprocal block usage


   **Passed** : **Check for HDL Reciprocal block usage**

_____

✅ Check for infinite and continuous sample time sources


   **Passed** : **Check for infinite and continuous sample time sources**

_____

⛔ Check for unsupported blocks


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

_____

⚠️ Check for MATLAB Function block settings


   **Warn** : **Check for MATLAB Function block settings**


   **Warning** : Following blocks have 'Saturate on integer overflow' set to 'on'

- FinalModel/Subsystem/MATLAB Function


   **Warning** : The following blocks should have parameter 'MATLAB Function fimath' set to 'Other:User Defined'.The fimath string should have 'RoundMode' set to 'Floor', 'OverflowMode' set to wrap, and 'ProductMode' and 'SumMode' set to 'FullPrecision'.

- FinalModel/Subsystem/MATLAB Function

_____


150

✅ 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
  Not Run


📁 Industry standard checks  🚫7 ❌0 ⚠️1 🔲0 ✅3 ▤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


151

**Passed** : **Check top-level subsystem/port names**

_____

✅ Check module/entity names

**Passed** : **Check module/entity names**

_____

⛔ 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.

- FinalModel/Subsystem/MATLAB Function/e
- FinalModel/Subsystem/MATLAB Function/y
- FinalModel/Subsystem/y
- FinalModel/Subsystem/MATLAB Function/ SFunction

_____

⛔ 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'.

📁 Model configuration checks   ⛔3 ❌0 ⚠2 ☒0 ✅0 ☰1

_____

⚠ 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.

∧ Less

🚫 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
Not Run

_____

📁 Native Floating Point checks   🚫0 ❌0 ⚠️0 ☑️0 ✅0 ▤8

_____

Check for blocks that have nonzero output latency
Not Run

_____

154

Check blocks with nonzero ulp error
    Not Run

---

Check for single datatypes in the model
    Not Run

---

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 unsupported blocks with Native Floating Point
    Not Run

Checks for ports and subsystems   ⛔0 ❌0 ⚠0 ▣0 ✅2 ▤0

---

✅ Check for invalid top level subsystem


    **Passed** : **Check for invalid top level subsystem**

---

✅ Check initial conditions of enabled and triggered subsystems


    **Passed** : **Check initial conditions of enabled and triggered subsystems**

_____

*Display configuration management data*
  Not Run

_____

✅ *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 |
|---|---|
| Inport | 2 |
| Outport | 1 |
| SubSystem | 3 |
| MATLAB Function | 1 |

Simulink

| Block Type | Count |
|---|---|
| VideoViewer | 3 |
| SubSystem | 3 |
| Inport | 2 |
| MATLAB Function Block | 1 |

| | |
|---|---|
| Outport | 1 |

Stateflow

| Stateflow construct | Count |
|---|---|
| Stateflow Data | 3 |

_____ **Model complexity information**

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 3

Subsystem Depth

| Subsystem Name | Level | Depth |
|---|---|---|
| FinalModel/Background input | 1 | 1 |
| FinalModel/Subject input | 1 | 1 |
| FinalModel/Subsystem | 1 | 2 |
| FinalModel/Subsystem/MATLAB Function | 2 | 1 |

_____

✅ *Check for unconnected objects*

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

**Passed**

There are no unconnected lines, input ports, and output ports in this model.

📁 *High-Integrity Systems*   ⛔1 ❌0 ⚠31 ☑0 ✅31 📋33

📁 Simulink   ⛔0 ❌0 ⚠1 ☑0 ✅11 📋24

_____

📥 Check usage of Abs blocks

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 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.

_____

158

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 usage of Merge blocks

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 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.

**Passed**

No blocks found which are not recommended for C/C++ production code deployment.

_____

✅ 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

Not Run

_____

✅ 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

Not Run

_____

✅ Check for root Inports with missing properties

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

**Passed**

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

_____

Check for root Inports with missing range definitions

Not Run

_____

Check for root Outports with missing range definitions

Not Run

_____

Check usage of Reciprocal Sqrt blocks

Not Run

_____

Check usage of Assignment blocks

Not Run

_____

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.

**Passed**

No Gain blocks found with value which resolves to 1.

_____

Check for length of user-defined object names

Not Run

_____

Check data type of loop control variables

Not Run

_____

Check for divide-by-zero calculations

Not Run

_____

161

✅ 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

Not Run

_____

⚠ 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.

**Passed**

No blocks found that have disabled or parameterized library links.

_____

Check for unreachable and dead code

Not Run

_____

Stateflow    0   0   1   0   7   4

_____

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

Not Run

_____

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
Not Run

_____

✅ 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

Not Run

_____

Check Stateflow charts for unary operators

Not Run


📁 MATLAB  ⛔0 ❌0 ⚠️4 🔲0 ✅3 ▤4

_____

⚠️ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.




**Warning**



The following MATLAB functions use non-standard function headers:




| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... |




**Recommended Action**


165

Ensure that the function has standard function header.

_____ Identify usage of standardized function headers in MATLAB function.

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function [BW,maskedRGBImage] = createMask(RGB)... |

**Recommended Action**

Ensure that the function header has a function description.

_____

⚠️ Check for MATLAB Function interfaces with inherited properties
   Identify MATLAB Functions that have inputs, outputs, or parameters with inherited complexity or data type properties.

Warning

The following MATLAB Functions have interfaces of data type property set to 'Inherit: Same as Simulink' or 'Inherit: From definition in chart':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

  **Recommended Action**

  Change data type of identified data objects from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit data type.

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

  The following MATLAB Functions have interfaces of complexity property set to 'Inherited':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

  **Recommended Action**

  Change complexity of identified data objects from 'Inherited' to 'On' or 'Off'.

_____

⚠ Check MATLAB Function metrics
   Identify MATLAB Functions that violate code and complexity metrics.

The following MATLAB Function blocks were found to violate code and complexity metrics:

167

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... | Density of Comments = 0.17391. Density of Comments should be greater than 0.2. |

**Recommended Action**

Remodel the functions to meet the set code and complexity metrics

_____

⚠ Check MATLAB Code Analyzer messages

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

**Warning**

The following MATLAB Function blocks were found with Code Analyzer warnings, missing %#codegen directive or inappropriate usage of justification message IDs:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | ASGLU : The value assigned here to 'b' appears to be unused. Consider replacing it by ~. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | gm=bg; | NASGU : The value assigned to variable 'gm' might be unused. |

**Recommended Action**

Consider correcting the above mentioned warnings -

- Implement MATLAB Code Analyzer recommendations

- Justify code line with %#ok comment

- Specify justification by adding message id to %#ok comment

- For MATLAB Function files, add %#codegen directive, if missing

_____

✅ 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
 Not Run

_____

Check usage of logical operators and functions in MATLAB Function blocks
 Not Run

_____

Check type and size of condition expressions
 Not Run

_____

✅ Check MATLAB functions not supported for code generation
 Identify MATLAB functions that are not supported for code generation.

169

**Passed**

All identified MATLAB functions are supported for code generation.

_____

📥 Metrics for generated code complexity

Not Run

📁 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**

170

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 | Show eliminated blocks (ShowEliminatedStatement) | off | on | GenerateComments |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | Verbose comments for 'Model default' storage class (ForceParamTrailComments) | off | on | GenerateComments |
| Warning | ReqsInCode | *Prerequisite constraint not met.* | 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 | Support non-finite numbers (SupportNonFinite) | on | off | |
| Warning | SupportAbsoluteTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | IncludeMdlTerminateFcn | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SuppressErrorStatus | *Prerequisite constraint not met.* | on | SystemTargetFile |
| Warning | MAT-file logging (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.

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 | *Prerequisite constraint not met.* | Maximum, Standards | SystemTargetFile |
|---------|------------------|-----------------------------------|--------------------|------------------|
| Warning | PreserveExpressionOrder | *Prerequisite constraint not met.* | on | SystemTargetFile |
| D - Warning | System target file (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.

179

_____

⚠ 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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | | |
| Warning | MangleLength | *Prerequisite constraint not met.* | | 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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | ZeroExternalMemoryAtStartup* | *Prerequisite constraint not met.* | on | SystemTargetFile, CodeInterfacePackaging |
| Warning | ZeroInternalMemoryAtStartup* | *Prerequisite constraint not met.* | 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 | Remove code from floating-point to integer conversions that wraps out-of-range values (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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | NoFixptDivByZeroProtection | *Prerequisite constraint not met.* | 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 | _Prerequisite constraint not met._ | off | SystemTargetFile |
| D - Warning | System target file (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**

185

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 |

| Status | Parameter | Current Value | Recommended Values |
|---|---|---|---|
| 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 Inport/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.

📁 Naming  ⛔0 ❌0 ⚠0 ☑0 ✅1 ☰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
Not Run

📁 Requirements  ⛔1 ❌0 ⚠0 ☑0 ✅0 ☰0

_____

⛔ Check for model elements that do not link to requirements

Abnormal exit: Unable to resolve the name 'rmiml.getReqTableData'.

📁 Code  ⛔0 ❌0 ⚠1 ☑0 ✅1 ☰0

_____

✅ 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**

193

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 | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | MAT-file logging (MatFileLogging) | on | off | |
| Warning | ParenthesesLevel | *Prerequisite constraint not met.* | Standards, Maximum | SystemTargetFile |
| Warning | CastingMode | *Prerequisite constraint not met.* | Standards | SystemTargetFile |
| Warning | InternalIdentifier | *Prerequisite constraint not met.* | Shortened | SystemTargetFile |

| | | | | |
|---|---|---|---|---|
| Warning | Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation) | off | on, UseDivisionForReciprocalsOfIntegersOnly | |
| Warning | EnableSignedLeftShifts | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | EnableSignedRightShifts | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (InstructionSetExtensions) | SSE2 | None | |

∧ Less

195

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

📁 Modeling Standards for IEC 62304   ⛔1 ❌0 ⚠️31 ☑️0 ✅33 ▤34
_____

📥 *Display configuration management data*
　Not Run

_____

✅ *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 |
|---|---|
| Inport | 2 |
| Outport | 1 |
| SubSystem | 3 |
| MATLAB Function | 1 |

Simulink

| Block Type | Count |
|---|---|
| VideoViewer | 3 |
| SubSystem | 3 |
| Inport | 2 |
| MATLAB Function Block | 1 |
| Outport | 1 |

Stateflow

| Stateflow construct | Count |
|---|---|
| Stateflow Data | 3 |

_____ **Model complexity information**

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 3

Subsystem Depth

| Subsystem Name | Level | Depth |
|---|---|---|
| FinalModel/Background input | 1 | 1 |

| | | |
|---|---|---|
| FinalModel/Subject input | 1 | 1 |
| FinalModel/Subsystem | 1 | 2 |
| FinalModel/Subsystem/MATLAB Function | 2 | 1 |

---

✅ *Check for unconnected objects*

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

**Passed**

There are no unconnected lines, input ports, and output ports in this model.

📁 *High-Integrity Systems*   ⛔*1* ❌*0* ⚠️*31* 🔲*0* ✅*31* 🗎*33*

📁 Simulink   ⛔0 ❌0 ⚠️1 🔲0 ✅11 🗎24

---

📥 Check usage of Abs blocks

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 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

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 usage of Merge blocks

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

_____

199

Check usage of bitwise operations

Not Run

_____

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.

**Passed**

No blocks found which are not recommended for C/C++ production code deployment.

_____

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

Not Run

_____

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

Not Run

_____

✅ Check for root Inports with missing properties

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

**Passed**

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

_____

📥 Check for root Inports with missing range definitions

Not Run

_____

📥 Check for root Outports with missing range definitions

Not Run

_____

📥 Check usage of Reciprocal Sqrt blocks

Not Run

_____

📥 Check usage of Assignment blocks

Not Run

_____

✅ 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.

**Passed**

No Gain blocks found with value which resolves to 1.

_____

📥 Check for length of user-defined object names

Not Run

201

_____

⬛ Check data type of loop control variables

Not Run

_____

⬛ Check for divide-by-zero calculations

Not Run

_____

✅ 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

Not Run

_____

⚠️ 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.

**Passed**
No blocks found that have disabled or parameterized library links.

_____

📥 Check for unreachable and dead code
Not Run

_____

📁 Stateflow   ⛔0 ❌0 ⚠1 ☑0 ✅7 📋4

_____

✅ 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
Not Run

_____

⚠ Check Stateflow debugging options
Identify whether Stateflow debugging options are set appropriately.

203

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
Not Run

_____

✓ 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

Not Run

_____

Check Stateflow charts for unary operators

Not Run



📁 MATLAB  ⛔0 ❌0 ⚠4 🔲0 ✓3 ▤4

_____

⚠ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.



**Warning**



The following MATLAB functions use non-standard function headers:

205

| Block Path | Expression |
| --- | --- |
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... |

### Recommended Action

Ensure that the function has standard function header.

_____ Identify usage of standardized function headers in MATLAB function.

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
| --- | --- |
| FinalModel/Subsystem/MATLAB Function | function [BW,maskedRGBImage] = createMask(RGB)... |

### Recommended Action

Ensure that the function header has a function description.

_____

⚠ Check for MATLAB Function interfaces with inherited properties

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

The following MATLAB Functions have interfaces of data type property set to 'Inherit: Same as Simulink' or 'Inherit: From definition in chart':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change data type of identified data objects from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit data type.

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

The following MATLAB Functions have interfaces of complexity property set to 'Inherited':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change complexity of identified data objects from 'Inherited' to 'On' or 'Off'.

_____

⚠ Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

The following MATLAB Function blocks were found to violate code and complexity metrics:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... | Density of Comments = 0.17391. Density of Comments should be greater than 0.2. |

**Recommended Action**

Remodel the functions to meet the set code and complexity metrics

_____

⚠ Check MATLAB Code Analyzer messages

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

**Warning**

The following MATLAB Function blocks were found with Code Analyzer warnings, missing %#codegen directive or inappropriate usage of justification message IDs:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |

| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | ASGLU : The value assigned here to 'b' appears to be unused. Consider replacing it by ~. |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | gm=bg; | NASGU : The value assigned to variable 'gm' might be unused. |

**Recommended Action**

Consider correcting the above mentioned warnings -

- Implement MATLAB Code Analyzer recommendations

- Justify code line with %#ok comment

- Specify justification by adding message id to %#ok comment

- For MATLAB Function files, add %#codegen directive, if missing

_____

✅ 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
Not Run

_____

⬇ Check usage of logical operators and functions in MATLAB Function blocks
Not Run

_____

⬇ Check type and size of condition expressions
Not Run

_____

✅ 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
Not Run

📁 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 |

| Status | Parameter | | Current Value | Recommended Values |
|---|---|---|---|---|
| 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.

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

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Show eliminated blocks (ShowEliminatedStatement) | off | on | GenerateComments |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | Verbose comments for 'Model default' storage class (ForceParamTrailComments) | off | on | GenerateComments |
| Warning | ReqsInCode | *Prerequisite constraint not met.* | 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.

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

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Support non-finite numbers (SupportNonFinite) | on | off | |
| Warning | SupportAbsoluteTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | IncludeMdlTerminateFcn | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SuppressErrorStatus | *Prerequisite constraint not met.* | on | SystemTargetFile |
| Warning | MAT-file logging (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.

215

⚠ 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.

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.

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 | *Prerequisite constraint not met.* | Maximum, Standards | SystemTargetFile |
| Warning | PreserveExpressionOrder | *Prerequisite constraint not met.* | on | SystemTargetFile |
| D - Warning | System target file (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.

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | | |
| Warning | MangleLength | *Prerequisite constraint not met.* | | 1, 2, 3 | SystemTargetFile |

**Recommended Action**

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

220

⚠ 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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | ZeroExternalMemoryAtStartup* | *Prerequisite constraint not met.* | on | SystemTargetFile, CodeInterfacePackaging |
| Warning | ZeroInternalMemoryAtStartup* | *Prerequisite constraint not met.* | 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 | Remove code from floating-point to integer conversions that wraps out-of-range values (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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | NoFixptDivByZeroProtection | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | off | SystemTargetFile |

| D - Warning | System target file (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.

227

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 Inport/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 | 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 ❌0 ⚠0 🔷0 ✅1 ▤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
Not Run

📁 Requirements  ⛔1 ❌0 ⚠0 🔷0 ✅0 ▤0
_____

🚫 Check for model elements that do not link to requirements

<span style="color:red">Abnormal exit: Unable to resolve the name 'rmiml.getReqTableData'.</span>

📁 Code   🚫0 ❌0 ⚠️1 ☑️0 ✅1 ▤0
_____

✅ 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 | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |

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

| | Undirected event broadcasts (SFUndirectedBroadcastEventsDiag) | warning | error | |
|---|---|---|---|---|
| Warning | | | | |
| Warning | Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit) | 50 | 0 | |
| Warning | Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion) | on | off | |
| Warning | MATLABFcnDesc | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (InstructionSetExtensions) | SSE2 | None | |

∧ Less

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

📁 Modeling Standards for ISO 26262   ⛔1 ❌0 ⚠31 ☑0 ✅33 ☰34
_____

📥 *Display configuration management data*
　Not Run

_____

✅ *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 |
|---|---|
| Inport | 2 |
| Outport | 1 |
| SubSystem | 3 |
| MATLAB Function | 1 |

Simulink

| Block Type | Count |
|---|---|
| VideoViewer | 3 |
| SubSystem | 3 |
| Inport | 2 |
| MATLAB Function Block | 1 |
| Outport | 1 |

Stateflow

| Stateflow construct | Count |
|---|---|
| Stateflow Data | 3 |

_____

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 3

Subsystem Depth

| Subsystem Name | Level | Depth |
|---|---|---|
| FinalModel/Background input | 1 | 1 |
| FinalModel/Subject input | 1 | 1 |
| FinalModel/Subsystem | 1 | 2 |
| FinalModel/Subsystem/MATLAB Function | 2 | 1 |

_____

✅ *Check for unconnected objects*
  Identify unconnected lines, input ports, and output ports in the model

**Passed**
There are no unconnected lines, input ports, and output ports in this model.

📁 *High-Integrity Systems*  ⛔1 ❌0 ⚠31 ☑0 ✅31 ▤33

📁 Simulink  ⛔0 ❌0 ⚠1 ☑0 ✅11 ▤24

_____

📥 Check usage of Abs blocks

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 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

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

_____

239

Check usage of conditionally executed subsystems

Not Run

---

Check usage of Merge blocks

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 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.

**Passed**

No blocks found which are not recommended for C/C++ production code deployment.

---

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

Not Run

---

✅ 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

Not Run

_____

✅ Check for root Inports with missing properties

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

**Passed**

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

_____

Check for root Inports with missing range definitions

Not Run

_____

Check for root Outports with missing range definitions

Not Run

_____

Check usage of Reciprocal Sqrt blocks

Not Run

_____

Check usage of Assignment blocks

Not Run

241

---

✅ 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.

**Passed**

No Gain blocks found with value which resolves to 1.

---

Check for length of user-defined object names

Not Run

---

Check data type of loop control variables

Not Run

---

Check for divide-by-zero calculations

Not Run

---

✅ 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

Not Run

---

⚠️ 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.

**Passed**
No blocks found that have disabled or parameterized library links.

_____

📥 Check for unreachable and dead code
Not Run

_____

📁 Stateflow ⛔0 ❌0 ⚠️1 ☑️0 ✅7 🗎4

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✅ 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.

243

_____

✅ 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

Not Run

_____

⚠️ 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

Not Run

_____

✅ 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

Not Run

_____

📥 Check Stateflow charts for unary operators

Not Run

245

📁 MATLAB  ⛔0 ❌0 ⚠️4 ☑️0 ✅3 ▤4

_____

⚠️ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

**Warning**

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... |

**Recommended Action**

Ensure that the function has standard function header.

_____          Identify
usage of standardized function headers in MATLAB function.

**Warning**

The following MATLAB functions use non-standard function headers:

246

| Block Path | Expression |
|------------|------------|
| FinalModel/Subsystem/MATLAB Function | function [BW,maskedRGBImage] = createMask(RGB)... |

**Recommended Action**

Ensure that the function header has a function description.

_____

⚠ Check for MATLAB Function interfaces with inherited properties

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

**Warning**

The following MATLAB Functions have interfaces of data type property set to 'Inherit: Same as Simulink' or 'Inherit: From definition in chart':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change data type of identified data objects from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit data type.

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

**Warning**

The following MATLAB Functions have interfaces of complexity property set to 'Inherited':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change complexity of identified data objects from 'Inherited' to 'On' or 'Off'.

_____

⚠ Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

**Warning**

The following MATLAB Function blocks were found to violate code and complexity metrics:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... | Density of Comments = 0.17391. Density of Comments should be greater than 0.2. |

**Recommended Action**

Remodel the functions to meet the set code and complexity metrics

_____

⚠ Check MATLAB Code Analyzer messages

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

The following MATLAB Function blocks were found with Code Analyzer warnings, missing %#codegen directive or inappropriate usage of justification message IDs:

| Block Path | Expression | Description |
| --- | --- | --- |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | ASGLU : The value assigned here to 'b' appears to be unused. Consider replacing it by ~. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | gm=bg; | NASGU : The value assigned to variable 'gm' might be unused. |

**Recommended Action**

Consider correcting the above mentioned warnings -

- Implement MATLAB Code Analyzer recommendations

- Justify code line with %#ok comment

- Specify justification by adding message id to %#ok comment

- For MATLAB Function files, add %#codegen directive, if missing

_____

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

Not Run

_____

📋 Check usage of logical operators and functions in MATLAB Function blocks

Not Run

_____

📋 Check type and size of condition expressions

Not Run

_____

✅ 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

Not Run

📁 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.

250

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 | Show eliminated blocks (ShowEliminatedStatement) | off | on | GenerateComments |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | Verbose comments for 'Model default' storage class (ForceParamTrailComments) | off | on | GenerateComments |

253

| | | | | |
|---|---|---|---|---|
| Warning | ReqsInCode | *Prerequisite constraint not met.* | 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 | Support non-finite numbers (SupportNonFinite) | on | off | |
| Warning | SupportAbsoluteTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |

| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
|---------|------------------------|-----------------------------------|-----|------------------|
| Warning | IncludeMdlTerminateFcn | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SuppressErrorStatus | *Prerequisite constraint not met.* | on | SystemTargetFile |
| Warning | MAT-file logging (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.

255

| 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 |

| Status | Parameter | Current Value | Recommended Values |
|---|---|---|---|
| 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.

<span style="color:orange">**Warning**</span>

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 | *Prerequisite constraint not met.* | Maximum, Standards | SystemTargetFile |
| Warning | PreserveExpressionOrder | *Prerequisite constraint not met.* | on | SystemTargetFile |

| D - Warning | System target file (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.

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | | |
| Warning | MangleLength | *Prerequisite constraint not met.* | | 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.

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | ZeroExternalMemoryAtStartup* | *Prerequisite constraint not met.* | on | SystemTargetFile, CodeInterfacePackaging |
| Warning | ZeroInternalMemoryAtStartup* | *Prerequisite constraint not met.* | 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 | Remove code from floating-point to integer conversions that wraps out-of-range values (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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | NoFixptDivByZeroProtection | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (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.

264

**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.

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.

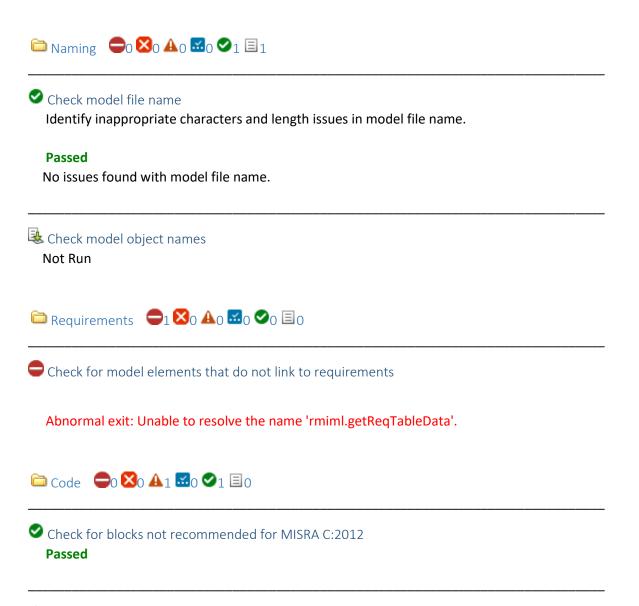**Warning**

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 |

| Status | Parameter | Current Value | Recommended Values |
|---|---|---|---|
| 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 Inport/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.

📁 Naming  ⛔0 ❌0 ⚠️0 🔧0 ✅1 📄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

Not Run

📁 Requirements  ⛔1 ❌0 ⚠️0 🔧0 ✅0 📄0

_____

⛔ Check for model elements that do not link to requirements

Abnormal exit: Unable to resolve the name 'rmiml.getReqTableData'.

📁 Code  ⛔0 ❌0 ⚠️1 🔧0 ✅1 📄0

_____

✅ 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.

274

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Model Verification block enabling (AssertControl) | UseLocalSettings | DisableAll | |
| D - Warning | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | MAT-file logging (MatFileLogging) | on | off | |
| Warning | ParenthesesLevel | *Prerequisite constraint not met.* | Standards, Maximum | SystemTargetFile |
| Warning | CastingMode | *Prerequisite constraint not met.* | Standards | SystemTargetFile |
| Warning | InternalIdentifier | *Prerequisite constraint not met.* | Shortened | SystemTargetFile |
| Warning | Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation) | off | on, UseDivisionForReciprocalsOfIntegersOnly | |

| | | | | |
|---|---|---|---|---|
| Warning | EnableSignedLeftShifts | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | EnableSignedRightShifts | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (InstructionSetExtensions) | SSE2 | None | |

∧ Less

276

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

📁 Modeling Standards for ISO 25119   ⛔1 ❌0 ⚠31 ☑0 ✅33 ☰34
_____

📥 *Display configuration management data*
Not Run

_____

✅ *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 |
|---|---|
| Inport | 2 |
| Outport | 1 |
| SubSystem | 3 |
| MATLAB Function | 1 |

Simulink

| Block Type | Count |
|---|---|

277

| | |
|---|---|
| VideoViewer | 3 |
| SubSystem | 3 |
| Inport | 2 |
| MATLAB Function Block | 1 |
| Outport | 1 |

Stateflow

| Stateflow construct | Count |
|---|---|
| Stateflow Data | 3 |

_____ **Model complexity information**

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 3

Subsystem Depth

| Subsystem Name | Level | Depth |
|---|---|---|
| FinalModel/Background input | 1 | 1 |
| FinalModel/Subject input | 1 | 1 |
| FinalModel/Subsystem | 1 | 2 |
| FinalModel/Subsystem/MATLAB Function | 2 | 1 |

278

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✅ *Check for unconnected objects*

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

**Passed**

There are no unconnected lines, input ports, and output ports in this model.

📁 *High-Integrity Systems*  ⛔1 ❌0 ⚠31 ☒0 ✅31 ▤33

📁 Simulink  ⛔0 ❌0 ⚠1 ☒0 ✅11 ▤24

─────────────────────────────────────────────

📥 Check usage of Abs blocks

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 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

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✅ Check usage of For and While Iterator subsystems

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

279

**Passed**

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

_____

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 usage of Merge blocks

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 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.

**Passed**

No blocks found which are not recommended for C/C++ production code deployment.

_____

✅ 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

Not Run

_____

✅ 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

Not Run

_____

✅ Check for root Inports with missing properties

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

**Passed**

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

_____

### Check for root Inports with missing range definitions
Not Run

_____

### Check for root Outports with missing range definitions
Not Run

_____

### Check usage of Reciprocal Sqrt blocks
Not Run

_____

### Check usage of Assignment blocks
Not Run

_____

### 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.

**Passed**

No Gain blocks found with value which resolves to 1.

_____

### Check for length of user-defined object names
Not Run

_____

### Check data type of loop control variables
Not Run

_____

🔧 Check for divide-by-zero calculations

Not Run

_____

✅ 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

Not Run

_____

⚠️ 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.

**Passed**

No blocks found that have disabled or parameterized library links.

_____

📥 Check for unreachable and dead code

Not Run

_____

📁 Stateflow  🚫0 ❌0 ⚠1 ☑0 ✅7 📄4

_____

✅ 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

Not Run

_____

⚠ Check Stateflow debugging options

Identify whether Stateflow debugging options are set appropriately.

**Warning**

The following Stateflow debugging options are not set appropriately:

284

| 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
Not Run

---

✅ 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

Not Run

_____

📥 Check Stateflow charts for unary operators

Not Run

📁 MATLAB  🚫0 ❌0 ⚠️4 ☑️0 ✅3 ▤4

_____

⚠️ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

**Warning**

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... |

**Recommended Action**

Ensure that the function has standard function header.

_____     Identify
usage of standardized function headers in MATLAB function.

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function [BW,maskedRGBImage] = createMask(RGB)... |

**Recommended Action**

Ensure that the function header has a function description.

_____

⚠ Check for MATLAB Function interfaces with inherited properties

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

287

The following MATLAB Functions have interfaces of data type property set to 'Inherit: Same as Simulink' or 'Inherit: From definition in chart':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change data type of identified data objects from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit data type.

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

**Warning**

The following MATLAB Functions have interfaces of complexity property set to 'Inherited':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change complexity of identified data objects from 'Inherited' to 'On' or 'Off'.

_____

⚠ Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

**Warning**

The following MATLAB Function blocks were found to violate code and complexity metrics:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... | Density of Comments = 0.17391. Density of Comments should be greater than 0.2. |

**Recommended Action**

Remodel the functions to meet the set code and complexity metrics

_____

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

**Warning**

The following MATLAB Function blocks were found with Code Analyzer warnings, missing %#codegen directive or inappropriate usage of justification message IDs:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | ASGLU : The value assigned here to 'b' appears to be unused. Consider replacing it by ~. |

| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | gm=bg; | NASGU : The value assigned to variable 'gm' might be unused. |

**Recommended Action**

Consider correcting the above mentioned warnings -

- Implement MATLAB Code Analyzer recommendations

- Justify code line with %#ok comment

- Specify justification by adding message id to %#ok comment

- For MATLAB Function files, add %#codegen directive, if missing

_____

✅ 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
Not Run

_____

Check usage of logical operators and functions in MATLAB Function blocks
Not Run

_____

⬇ Check type and size of condition expressions

Not Run

_____

✅ 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

Not Run

📁 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 |

291

| | Duplicate data store names | none | error |
|---|---|---|---|
| Warning | (UniqueDataStoreMsg) | | |

**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.

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

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Show eliminated blocks (ShowEliminatedStatement) | off | on | GenerateComments |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | Verbose comments for 'Model default' storage class (ForceParamTrailComments) | off | on | GenerateComments |
| Warning | ReqsInCode | *Prerequisite constraint not met.* | 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.

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

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Support non-finite numbers (SupportNonFinite) | on | off | |
| Warning | SupportAbsoluteTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | IncludeMdlTerminateFcn | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SuppressErrorStatus | *Prerequisite constraint not met.* | on | SystemTargetFile |
| Warning | MAT-file logging (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.

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.

299

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 | *Prerequisite constraint not met.* | Maximum, Standards | SystemTargetFile |
| Warning | PreserveExpressionOrder | *Prerequisite constraint not met.* | on | SystemTargetFile |
| D - Warning | System target file (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.

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | | |
| Warning | MangleLength | *Prerequisite constraint not met.* | | 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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | ZeroExternalMemoryAtStartup* | *Prerequisite constraint not met.* | on | SystemTargetFile, CodeInterfacePackaging |
| Warning | ZeroInternalMemoryAtStartup* | *Prerequisite constraint not met.* | 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 | Remove code from floating-point to integer conversions that wraps out-of-range values (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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | NoFixptDivByZeroProtection | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (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.

306

**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 |

309

| 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.

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.

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 Inport/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 |
|---|---|---|---|
| | | | |

313

| 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 ❌0 ⚠0 ☑0 ✅1 📄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
   Not Run

📁 Requirements  ⛔1 ❌0 ⚠0 ☑0 ✅0 📄0
_____

⛔ Check for model elements that do not link to requirements

314

<span style="color:red">Abnormal exit: Unable to resolve the name 'rmiml.getReqTableData'.</span>

📁 Code  ⛔0 ❌0 ⚠1 ☑0 ✅1 📄0

_____

✅ 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 | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |

315

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

| | 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 | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (InstructionSetExtensions) | SSE2 | None | |

∧ Less

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

📁 Modeling Standards for EN 50128/EN 50657    ⛔1 ❌0 ⚠31 🔧0 ✅33 📄34
_____

📥 *Display configuration management data*
   Not Run

_____

✅ *Display model metrics and complexity report*
   Display number of elements and name, level, and depth of subsystems for the model or subsystem

317

**Model metrics information**

Display number of elements for Simulink blocks and Stateflow constructs

Summary

| Element Type | Count |
|---|---|
| Inport | 2 |
| Outport | 1 |
| SubSystem | 3 |
| MATLAB Function | 1 |

Simulink

| Block Type | Count |
|---|---|
| VideoViewer | 3 |
| SubSystem | 3 |
| Inport | 2 |
| MATLAB Function Block | 1 |
| Outport | 1 |

Stateflow

| Stateflow construct | Count |
|---|---|
| Stateflow Data | 3 |

_____ **Model complexity information**

Display name, level, and depth of subsystems

Maximum Subsystem Depth: 3

Subsystem Depth

| Subsystem Name | Level | Depth |
|---|---|---|
| FinalModel/Background input | 1 | 1 |
| FinalModel/Subject input | 1 | 1 |
| FinalModel/Subsystem | 1 | 2 |
| FinalModel/Subsystem/MATLAB Function | 2 | 1 |

_____

✅ *Check for unconnected objects*
  Identify unconnected lines, input ports, and output ports in the model

  **Passed**
  There are no unconnected lines, input ports, and output ports in this model.

📁 *High-Integrity Systems*   ⛔*1* ❌*0* ⚠️*31* ☑️*0* ✅*31* 📋*33*

📁 Simulink   ⛔0 ❌0 ⚠️1 ☑️0 ✅11 📋24

_____

Check usage of Abs blocks

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 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

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 usage of Merge blocks

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 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.

**Passed**

No blocks found which are not recommended for C/C++ production code deployment.

_____

✅ 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

Not Run

_____

321

✅ 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

Not Run

_____

✅ Check for root Inports with missing properties

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

**Passed**

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

_____

📥 Check for root Inports with missing range definitions

Not Run

_____

📥 Check for root Outports with missing range definitions

Not Run

_____

📥 Check usage of Reciprocal Sqrt blocks

Not Run

_____

📥 Check usage of Assignment blocks

Not Run

322

✅ 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.

**Passed**

No Gain blocks found with value which resolves to 1.

---

Check for length of user-defined object names

Not Run

---

Check data type of loop control variables

Not Run

---

Check for divide-by-zero calculations

Not Run

---

✅ 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

Not Run

---

⚠️ Check safety-related diagnostic settings for variants

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

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.

**Passed**
No blocks found that have disabled or parameterized library links.

_____

📥 Check for unreachable and dead code
 Not Run

📁 Stateflow  🚫0 ❌0 ⚠️1 📋0 ✅7 📄4

_____

✅ 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

Not Run

___

⚠️ 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.

325

**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

Not Run

_____

✅ 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

Not Run

_____

📋 Check Stateflow charts for unary operators

Not Run

📁 MATLAB 🚫0 ❌0 ⚠️4 ☑️0 ✅3 🗒️4

_____

⚠️ Check usage of standardized MATLAB function headers

Identify usage of standardized function headers in MATLAB function.

**Warning**

The following MATLAB functions use non-standard function headers:

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... |

**Recommended Action**

Ensure that the function has standard function header.

_____        Identify usage of standardized function headers in MATLAB function.

**Warning**

The following MATLAB functions use non-standard function headers:

327

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | function [BW,maskedRGBImage] = createMask(RGB)... |

**Recommended Action**

Ensure that the function header has a function description.

_____

⚠ Check for MATLAB Function interfaces with inherited properties

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

**Warning**

The following MATLAB Functions have interfaces of data type property set to 'Inherit: Same as Simulink' or 'Inherit: From definition in chart':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change data type of identified data objects from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit data type.

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

**Warning**

The following MATLAB Functions have interfaces of complexity property set to 'Inherited':

- FinalModel/Subsystem/MATLAB Function/bg

- FinalModel/Subsystem/MATLAB Function/y

- FinalModel/Subsystem/MATLAB Function/e

**Recommended Action**

Change complexity of identified data objects from 'Inherited' to 'On' or 'Off'.

_____

⚠ Check MATLAB Function metrics

Identify MATLAB Functions that violate code and complexity metrics.

**Warning**

The following MATLAB Function blocks were found to violate code and complexity metrics:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | function y = fcn(bg,e)... | Density of Comments = 0.17391. Density of Comments should be greater than 0.2. |

**Recommended Action**

Remodel the functions to meet the set code and complexity metrics

_____

⚠ Check MATLAB Code Analyzer messages

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

The following MATLAB Function blocks were found with Code Analyzer warnings, missing %#codegen directive or inappropriate usage of justification message IDs:

| Block Path | Expression | Description |
|---|---|---|
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | ASGLU : The value assigned here to 'b' appears to be unused. Consider replacing it by ~. |
| FinalModel/Subsystem/MATLAB Function | [r c b]=size(e); | NCOMMA : Best practice is to separate output variables with commas. |
| FinalModel/Subsystem/MATLAB Function | gm=bg; | NASGU : The value assigned to variable 'gm' might be unused. |

**Recommended Action**

Consider correcting the above mentioned warnings -

- Implement MATLAB Code Analyzer recommendations

- Justify code line with %#ok comment

- Specify justification by adding message id to %#ok comment

- For MATLAB Function files, add %#codegen directive, if missing

_____

 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

Not Run

_____

📥 Check usage of logical operators and functions in MATLAB Function blocks

Not Run

_____

📥 Check type and size of condition expressions

Not Run

_____

✅ 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

Not Run

📁 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.

331

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 | Show eliminated blocks (ShowEliminatedStatement) | off | on | GenerateComments |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | Verbose comments for 'Model default' storage class (ForceParamTrailComments) | off | on | GenerateComments |

| | ReqsInCode | *Prerequisite constraint not met.* | on | SystemTargetFile, GenerateComments |
|---|---|---|---|---|
| Warning | | | | |

**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 | Support non-finite numbers (SupportNonFinite) | on | off | |
| Warning | SupportAbsoluteTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |

335

| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
|---------|------------------------|-------------------------------------|-----|------------------|
| Warning | IncludeMdlTerminateFcn | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SuppressErrorStatus | *Prerequisite constraint not met.* | on | SystemTargetFile |
| Warning | MAT-file logging (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.

336

| 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 |

| | Block priority violation (BlockPriorityViolationMsg) | warning | error |
|---|---|---|---|
| Warning | | | |
| 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**

339

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 | *Prerequisite constraint not met.* | Maximum, Standards | SystemTargetFile |
| Warning | PreserveExpressionOrder | *Prerequisite constraint not met.* | on | SystemTargetFile |

| D - Warning | System target file (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.

341

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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | | |
| Warning | MangleLength | *Prerequisite constraint not met.* | | 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.

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

342

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | ZeroExternalMemoryAtStartup* | *Prerequisite constraint not met.* | on | SystemTargetFile, CodeInterfacePackaging |
| Warning | ZeroInternalMemoryAtStartup* | *Prerequisite constraint not met.* | 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 | Remove code from floating-point to integer conversions that wraps out-of-range values (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 | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | NoFixptDivByZeroProtection | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | off | SystemTargetFile |
| D - Warning | System target file (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.

346

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.

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 |

349

**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.

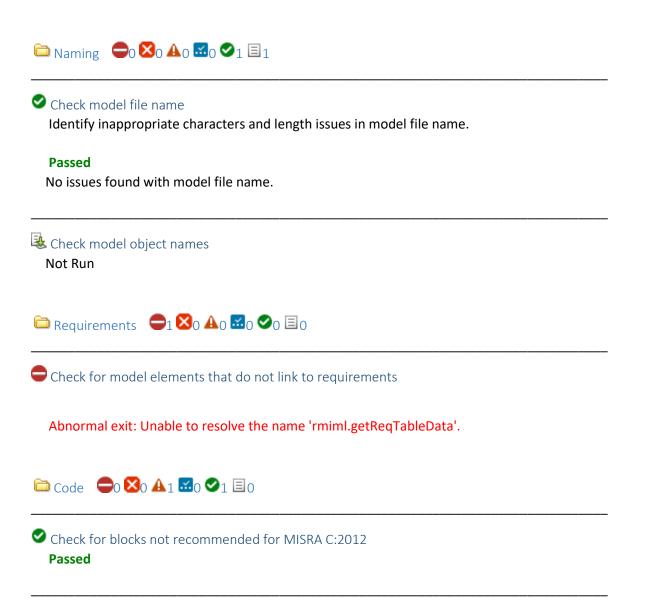**Warning**

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 Inport/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.

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**

353

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 ❌0 ⚠0 🔧0 ✅1 📄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

Not Run

📁 Requirements ⛔1 ❌0 ⚠0 🔧0 ✅0 📄0

_____

⛔ Check for model elements that do not link to requirements

Abnormal exit: Unable to resolve the name 'rmiml.getReqTableData'.

📁 Code ⛔0 ❌0 ⚠1 🔧0 ✅1 📄0

_____

✅ 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.

355

| Status | Parameter | Current Value | Recommended Values | Prerequisites |
|---|---|---|---|---|
| Warning | Model Verification block enabling (AssertControl) | UseLocalSettings | DisableAll | |
| D - Warning | Shared code placement (UtilityFuncGeneration) | Auto | Shared location | |
| Warning | Generate shared constants (GenerateSharedConstants) | *Prerequisite constraint not met.* | off | UtilityFuncGeneration |
| D - Warning | System target file (SystemTargetFile) | Non-ERT based target | ERT based target | |
| Warning | SupportContinuousTime | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | SupportNonInlinedSFcns | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | MAT-file logging (MatFileLogging) | on | off | |
| Warning | ParenthesesLevel | *Prerequisite constraint not met.* | Standards, Maximum | SystemTargetFile |
| Warning | CastingMode | *Prerequisite constraint not met.* | Standards | SystemTargetFile |
| Warning | InternalIdentifier | *Prerequisite constraint not met.* | Shortened | SystemTargetFile |
| Warning | Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation) | off | on, UseDivisionForReciprocalsOfIntegersOnly | |

| | | | | |
|---|---|---|---|---|
| Warning | EnableSignedLeftShifts | *Prerequisite constraint not met.* | off | SystemTargetFile |
| Warning | EnableSignedRightShifts | *Prerequisite constraint not met.* | 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 | *Prerequisite constraint not met.* | on | GenerateComments, SystemTargetFile |
| Warning | Leverage target hardware instruction set extensions (InstructionSetExtensions) | SSE2 | None | |

∧ Less

357

**Recommended Action**

Modify the configuration parameters listed above to the recommended values.

📁 Model Metrics  ⛔0 ❌0 ⚠0 ☑0 ✅9 ▤1

📁 *Count Metrics*  ⛔*0* ❌*0* ⚠*0* ☑*0* ✅*7* ▤*0*

_____

✅ Simulink block metric
    Display number of blocks in the model or subsystem.

    **Passed**

| Component | Blocks |
|---|---|
| FinalModel/Subsystem | 6 |
| FinalModel | 4 |
| FinalModel/Background input | 2 |
| FinalModel/Subject input | 2 |

_____

✅ Subsystem metric
    Display number of Subsystems in the model or subsystem.

    **Passed**

| Component | Subsystems |
|---|---|
| FinalModel | 1 |

| | |
|---|---|
| FinalModel/Subsystem | **0** |
| FinalModel/Background input | **0** |
| FinalModel/Subject input | **0** |

_____

✅ Library link metric

Display number of library links in the model or subsystem.

**Passed**

| Component | Library Links |
|---|---|
| FinalModel | **0** |
| FinalModel/Subsystem | **0** |
| FinalModel/Background input | **0** |
| FinalModel/Subject input | **0** |

_____

✅ Effective lines of MATLAB code metric

Display number of effective lines of MATLAB code.

**Passed**

| Component | Effective LOC |
|---|---|
| FinalModel/Subsystem/MATLAB Function | **37** |

_____

✅ 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 |
|---|---|
| FinalModel/Subsystem | 1 |
| FinalModel/Background input | 1 |
| FinalModel/Subject input | 1 |
| FinalModel | 0 |

📁 *Complexity Metrics* ⛔0 ❌0 ⚠️0 ☑️0 ✅0 🗎1

_____

🗎 Cyclomatic complexity metric
   Not Run

📁 *Readability Metrics* ⛔0 ❌0 ⚠️0 ☑️0 ✅2 🗎0

_____

✅ Nondescriptive block name metric

Display non-descriptive names of Inport, Outport and Subsystem blocks.

**Passed**

| Component | Nondescriptive Names |
|---|---|
| FinalModel | 1 |
| FinalModel/Subsystem | 1 |
| FinalModel/Background input | 1 |
| FinalModel/Subject input | 1 |

_____

✅ Data and structure layer separation metric

Display data and structure layer separation, defined by MAB modeling guideline db_0143.

**Passed**

| Component | Non-conforming Blocks |
|---|---|
| FinalModel | 3 |
| FinalModel/Subsystem | 0 |
| FinalModel/Background input | 0 |
| FinalModel/Subject input | 0 |

📁 Modeling Standards for MAB  ⛔0 ❌0 ⚠️13 ☑️0 ✅104 ▤26

📁 *Naming Conventions*   ⛔0 ❌0 ⚠3 🔲0 ✅14 🗐3

📁 General   ⛔0 ❌0 ⚠1 🔲0 ✅3 🗐0

---

⚠ Check file names
**Characters allowed for file names**

**Warning**

The following files have invalid names:

- F:\LTTS\project\FinalModel.slx.original

- F:\LTTS\project\flow chart.png

**Recommended Action**

Consider having only alphanumeric characters and underscores in file name.

---

✅ Check folder names
Check the folder name to ensure that the name complies with the recommended guidelines.

**Passed**
All folders have correct names.

---

✅ 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: FinalModel

**Passed**

Folder names are valid.

📁 Content  ⛔0 ❌0 ⚠️2 ☒0 ✅11 📄3
_____

✅ Check subsystem names
**Passed**
_____

✅ Check port block names
**Passed**
_____

⚠️ Check character usage in block names
Characters allowed for block names

**Warning**

The following blocks have invalid names:

- FinalModel/Background changed

**Recommended Action**

Consider having only alphanumeric characters and underscores in block name.
_____

✅ Check length of subsystem names
**Passed**
_____

✅ Check length of block names
**Passed**
_____

363

✅ Check length of Inport and Outport names
   **Passed**

_____

✅ Check character usage in signal names and bus names
   Identify signal and bus names with invalid characters.

   **Passed**
   No invalid characters are used in signal and bus names.

_____

📥 Check character usage in parameter names
   Not Run

_____

✅ 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
   Not Run

_____

✅ 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

Not Run

_____

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.

**Warning**

Variable names conflict with reserved keywords

| Block Path | Expression |
|---|---|
| FinalModel/Subsystem/MATLAB Function | I |
| FinalModel/Subsystem/MATLAB Function | repmat |
| FinalModel/Subsystem/MATLAB Function | mkdir |

**Recommended Action**

Consider using different variable name(s)

📁 *Simulink* ⛔*0* ❌*0* ⚠️*9* 🔲*0* ✅*39* 📄*15*

📁 Configuration Parameters ⛔*0* ❌*0* ⚠️*2* 🔲*0* ✅*2* 📄*0*

_____

✅ 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.

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 ❌0 ⚠3 ☑0 ✅13 ▤1

_____

⚠ 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

The following diagrams do not have zoom factor set to 100 percent:

- FinalModel

- FinalModel/Subsystem

**Recommended Action**

For each listed diagram, select **Modeling > Environment > Zoom > Normal View (100%)**.

_____

### Check Model font settings
Identify blocks and charts with different font settings from input parameters.

**Passed**
Font settings of the blocks and charts and input parameters are same.

_____

### Check whether block names appear below blocks
**Passed**

_____

### 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.

**Passed**
All blocks with obvious behavior have hidden names.

**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.

**Passed**
All displayed names provide descriptive information.

**Check for missing block names**
Identify block names that are hidden but should be displayed to show a descriptive name.

370

**Passed**

All displayed names provide descriptive information.

_____

✅ Check for nondefault block attributes

Identify blocks that use and fail to display nondefault values.

**Passed**

Model displays all block parameter values that are not default values.

_____

⚠️ Check Model Description

Identify layers in the model having inconsistent description format.

**Warning**

Following layers do not have model descriptions:

- FinalModel

- FinalModel/Subsystem

**Recommended Action**

Consider adding model description for all the layers.

_____

✅ 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

Identify unconnected signal lines, subsystems and basic blocks.

**Passed**

All signal lines and blocks in the model are connected.

371

---

✅ Check signal line connections

Identify intersections and overlaps of signals in a model.

**Passed**

No signal intersections or overlaps found.

---

✅ Check signal flow in model

Identify subsystems which do not have a signal flow from left to right.

**Passed**

No subsystems found with inappropriate signal flow.

---

✅ 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

Not Run

---

✅ Check for consistency in model element names

Check if model elements connected to a signal are following consistent naming.

**Passed**

Model elements connected to a signal are following consistent names.

---

✅ 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).

The following level(s) in the model include basic blocks and subsystems:

| System | Block path |
|---|---|
| FinalModel | FinalModel/Background changed |
| FinalModel | FinalModel/Background input |
| FinalModel | FinalModel/Subject input |

**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
**Passed**

373

📁 Signal  🚫0 ❌0 ⚠3 ☑0 ✅2 🗐1

_____

📥 Check usage of vector and bus signals

Not Run

_____

⚠ 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:

- FinalModel/Subsystem/bg/

- FinalModel/Subsystem/In2/

- FinalModel/Subsystem/

- FinalModel/Subsystem/MATLAB Function/

**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**

374

The following signals have no label:

- FinalModel/Subsystem/y/

- FinalModel/Subsystem/

- FinalModel/Subsystem/

- FinalModel/Subsystem/MATLAB Function/

- FinalModel/Subsystem/MATLAB Function/

**Recommended Action**

Add a new or propagated label to the signal line.

_____

⚠ Check Signal name propagation
**Check Signal name propagation for subsystems**

The following subsystems do not have propagated signal labels:

- FinalModel

- FinalModel/Subsystem

- FinalModel/Subsystem

- FinalModel/Subsystem

**Recommended Action**

Add labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

_____

✅ Check position of signal labels

Identify inappropriately placed signal labels.

**Passed**

No signals found with inappropriately placed labels.

_____

⚠️ 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:

* FinalModel/Subsystem/bg/

* FinalModel/Subsystem/In2/

* FinalModel/Subsystem/

* FinalModel/Subsystem/MATLAB Function/

**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**

The following signals have no label:

- FinalModel/Subsystem/y/

- FinalModel/Subsystem/

- FinalModel/Subsystem/

- FinalModel/Subsystem/MATLAB Function/

- FinalModel/Subsystem/MATLAB Function/

**Recommended Action**

Add a new or propagated label to the signal line.

_____

✅ Check for propagated signal labels
Identify propagated labels on signal lines.

**Passed**
All inputs and outputs to the subsystems and blocks have labels and display propagated signals.

📁 Block Consistency  🚫0 ❌0 ⚠️1 🔲0 ✅3 📄2

_____

⚠️ Check Indexing Mode
**Check for Zero-Based Indexing Mode.**

The following blocks or charts have One-Based Indexing mode:

- FinalModel/Subsystem/MATLAB Function

**Recommended Action**

Consider remodeling by using Zero-Based Indexing.

_____

✅ Check block orientation
Identify blocks which are rotated or reversed.

**Passed**
No blocks found with rotated or reversed orientation

_____

✅ Check if tunable block parameters are defined as named constants
Check if tunable block parameters are defined as named constants

**Passed**
All tunable block parameters are defined as named constants

_____

✅ Check for sample time setting
Check if sample time property of a block is set to -1 (inherited).

**Passed**
All permitted blocks have sample time set to -1 (inherited).

_____

📥 Check usage of fixed-point data type with non-zero bias
Not Run

_____

📥 Check type setting by data objects
Not Run

_____

📁 Conditional Subsystem relations  🚫0 ❌0 ⚠0 ✅0 ✅4 📄1

_____

✅ Check position of conditional blocks and iterator blocks
Identify conditional and iterative blocks that are positioned inconsistently in the model.

**Passed**
The conditional and iterative blocks are correctly placed in the model.

_____

378

📥 Check undefined initial output for conditional subsystems

Not Run

_____

✅ 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 ❌0 ⚠0 🔲0 ✅9 ▤6

_____

📥 Check fundamental logical and numerical operations

Not Run

_____

✅ Check usage of Sum blocks

Identify Sum block usage that can affect readability.

**Passed**

No violations of the guideline found with the usage of the Sum block.

_____

✅ Check operator order of Product blocks

**Passed**

_____

379

⊞ Check signs of input signals in product blocks

Not Run

_____

✅ 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**

This model does not contain Relational Operator blocks.

_____

⊞ Check comparison of floating point types in Simulink

Not Run

_____

✅ Check usage of Lookup Tables

Check usage of recommended settings for Lookup Table blocks to prevent unexpected results.

**Passed**

All Lookup Table blocks have recommended settings.

_____

⊞ Check usage of Memory and Unit Delay blocks

Not Run

_____

✅ 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.

380

✅ 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

Not Run

_____

✅ Check output data type of operation blocks

jc_0651: Implementing a type conversion

Identify operation blocks that specify output data type.

**Passed**

No operation blocks found that explicitly specify output data type.

_____

📥 Check for division by zero in Simulink

Not Run

_____

📁 Other blocks  ⛔0 ❌0 ⚠0 🔲0 ✅6 ▤4

_____

✅ Check position of Inport and Outport blocks

Identify inappropriately placed Inport and Outport blocks.

**Passed**

No Inport or Outport blocks found which are inappropriately placed.

_____

✅ Check display for port blocks

**Passed**

_____

📥 Check scope of From and Goto blocks

Not Run

381

_____

✅ 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

Not Run

_____

⬇ Check input and output datatype for Switch blocks

Not Run

_____

⬇ Check settings for data ports in Multiport Switch blocks

Not Run

_____

✅ 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**
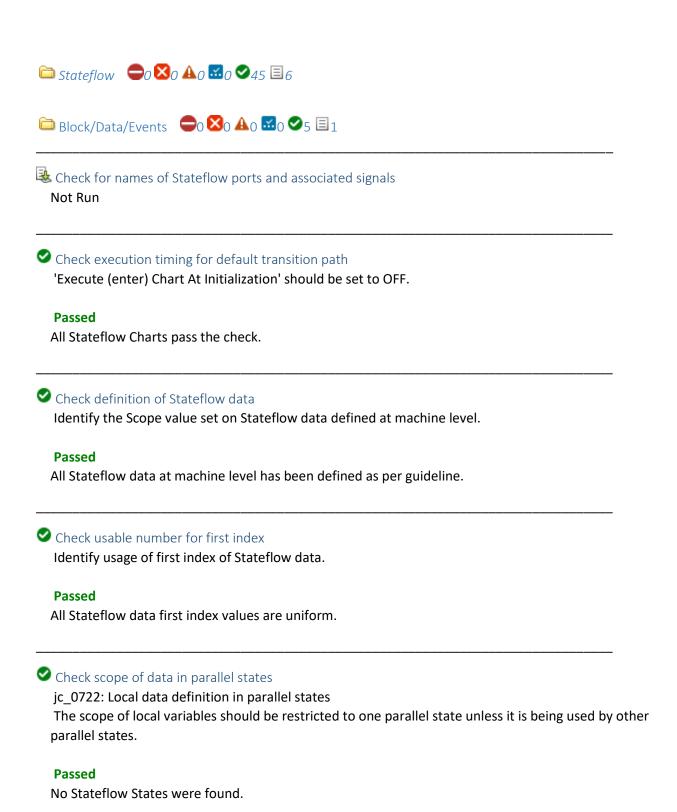
All variant subsystems in the model use default variants

_____

✅ 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

382

## Stateflow  ⛔0 ❌0 ⚠0 ☒0 ✅45 ▤6

## Block/Data/Events  ⛔0 ❌0 ⚠0 ☒0 ✅5 ▤1

_____

### Check for names of Stateflow ports and associated signals
Not Run

_____

### ✅ 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.

_____

385

✅ 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.

386

📁 Condition Transition/Action   ⛔0 ❌0 ⚠0 ☑0 ✅12 ▤5

___

✅ 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**
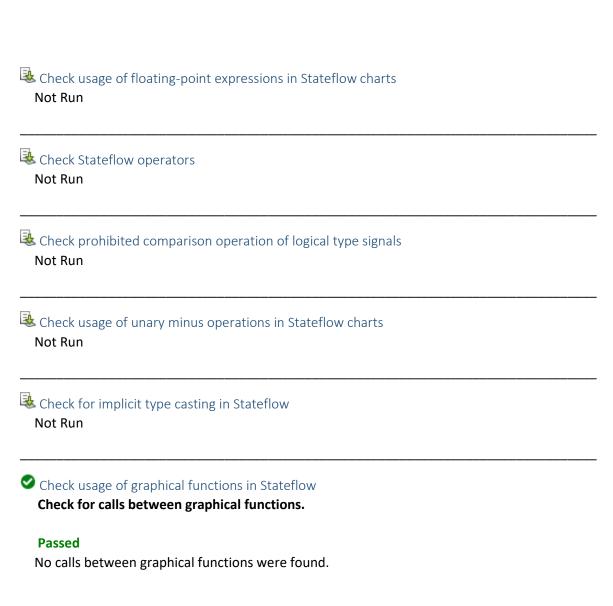
No Stateflow charts have transition actions.

_____

✅ 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

Not Run

_____

Check Stateflow operators

Not Run

_____

Check prohibited comparison operation of logical type signals

Not Run

_____

Check usage of unary minus operations in Stateflow charts

Not Run

_____

Check for implicit type casting in Stateflow

Not Run

_____

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 ❌0 ⚠1 ▣0 ✅6 ▤2

📁 Data and Operations ⛔0 ❌0 ⚠1 ▣0 ✅1 ▤1

_____

✅ 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 global variables 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
Not Run

_____

⚠ 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.

**Warning**

The following MATLAB Functions have interfaces with inherited complexity, data type, or size properties:

| MATLAB Function | Inherited interfaces | | |
|---|---|---|---|
| FinalModel/Subsystem/MATLAB Function | **Interface element** | **Property** | **Specified value** |
| | bg<br><br>(Input) | Size | -1 |
| | | Type | Inherit: Same as Simulink |
| | | Complexity | Inherited |
| | y | Size | -1 |

| | (Output) | | |
|---|---|---|---|
| | | Type | Inherit: Same as Simulink |
| | | Complexity | Inherited |
| | e (Input) | Size | -1 |
| | | Type | Inherit: Same as Simulink |
| | | Complexity | Inherited |
| | 9 issues | | |

**Recommended Action**

Explicitly define complexity, data type, and size properties for inports, outports, and parameters of MATLAB Functions identified in the results. If applicable, make the following modifications in the Property Inspector or Model Explorer of the MATLAB Function Editor:

- Change complexity from 'Inherited' to 'On' or 'Off'

- Change type from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit type

- Change size from '-1' (inherited) to an explicit size

📁 Usage  ⛔0 ❌0 ⚠0 🔲0 ✅5 🗐1
_____

✅ 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

Not Run

---

📁 Modeling Standards for JMAAB  ⛔0 ❌0 ⚠️10 ☑️0 ✅93 ▤25

📁 *Naming Conventions*  ⛔0 ❌0 ⚠️2 ☑️0 ✅10 ▤2

---

⚠️ Check file names

**Characters allowed for file names**

The following files have invalid names:

- F:\LTTS\project\FinalModel.slx.original

- F:\LTTS\project\flow chart.png

**Recommended Action**

Consider having only alphanumeric characters and underscores in file name.

_____

✅ Check folder names

Check the folder name to ensure that the name complies with the recommended guidelines.

**Passed**

All folders have correct names.

_____

✅ Check subsystem names

**Passed**

_____

✅ Check port block names

**Passed**

_____

⚠️ Check character usage in block names

Characters allowed for block names

**Warning**

The following blocks have invalid names:

- FinalModel/Background changed

**Recommended Action**

Consider having only alphanumeric characters and underscores in block name.

_____

✅ Check character usage in signal names and bus names
Identify signal and bus names with invalid characters.

**Passed**
No invalid characters are used in signal and bus names.

_____

📋 Check character usage in parameter names
Not Run

_____

✅ 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: FinalModel

**Passed**

Folder names are valid.

_____

✅ Check length of subsystem names
**Passed**

_____

✅ Check length of Inport and Outport names
**Passed**

_____

397

✅ 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

   Not Run

_____

✅ Check length of block names

   **Passed**


📁 *Model Architecture*   🚫0 ❌0 ⚠1 ☑0 ✅0 ▤0

_____

⚠ 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 |
|--------|------------|
| FinalModel | FinalModel/Background changed |
| FinalModel | FinalModel/Background input |
| FinalModel | FinalModel/Subject input |


   **Recommended Action**


398

If possible, replace blocks at the identified level of the model hierarchy with basic blocks. Move nonvirtual blocks into the identified subsystem.

📁 *Model Configuration Options*  ⛔0 ❌0 ⚠1 ☒0 ✅1 ▤0
_____

✅ 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 |

399

**Recommended Action**

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

📁 *Simulink* 🚫0 ❌0 ⚠5 ☑0 ✅34 ▤16
_____

⚠ 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:

- FinalModel

- FinalModel/Subsystem

**Recommended Action**

For each listed diagram, select **Modeling > Environment > Zoom > Normal View (100%)**.

_____

Check Model font settings

Identify blocks and charts with different font settings from input parameters.

**Passed**

Font settings of the blocks and charts and input parameters are same.

_____

✅ Check position of Inport and Outport blocks

Identify inappropriately placed Inport and Outport blocks.

**Passed**

No Inport or Outport blocks found which are inappropriately placed.

_____

✅ Check whether block names appear below blocks

**Passed**

_____

✅ 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.

**Passed**

All blocks with obvious behavior have hidden names.

**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.

**Passed**

All displayed names provide descriptive information.

**Check for missing block names**

Identify block names that are hidden but should be displayed to show a descriptive name.

**Passed**

All displayed names provide descriptive information.

_____

✅ Check for nondefault block attributes

Identify blocks that use and fail to display nondefault values.

**Passed**

Model displays all block parameter values that are not default values.

_____

402

✅ 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

Identify unconnected signal lines, subsystems and basic blocks.

**Passed**

All signal lines and blocks in the model are connected.

_____

📥 Check usage of Switch blocks

Not Run

_____

✅ Check usage of Relational Operator blocks

Identify Relational Operator blocks that connect to constants with the first (upper) input value.

**Passed**

This model does not contain Relational Operator blocks.

_____

⚠️ Check Indexing Mode

**Check for Zero-Based Indexing Mode.**

**Warning**

The following blocks or charts have One-Based Indexing mode:

- FinalModel/Subsystem/MATLAB Function

**Recommended Action**

Consider remodeling by using Zero-Based Indexing.

_____

403

✅ 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:

- FinalModel/Subsystem/bg/

- FinalModel/Subsystem/In2/

- FinalModel/Subsystem/

- FinalModel/Subsystem/MATLAB Function/

**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**

The following signals have no label:

- FinalModel/Subsystem/y/

- FinalModel/Subsystem/

- FinalModel/Subsystem/

- FinalModel/Subsystem/MATLAB Function/

- FinalModel/Subsystem/MATLAB Function/

**Recommended Action**

Add a new or propagated label to the signal line.

_____

⚠ Check Signal name propagation

**Check Signal name propagation for subsystems**

The following subsystems do not have propagated signal labels:

- FinalModel

- FinalModel/Subsystem

- FinalModel/Subsystem

- FinalModel/Subsystem

**Recommended Action**

Add labels and enable signal propagation by selecting 'Show propagated signal' parameter for signals.

_____

405

✅ 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

Not Run

_____

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

Not Run

_____

Check input and output datatype for Switch blocks

Not Run

_____

Check signs of input signals in product blocks

Not Run

_____

✅ 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

Not Run

_____

Check usage of the Saturation blocks

Not Run

_____

406

✅ 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

Not Run

_____

✅ Check block orientation

Identify blocks which are rotated or reversed.

**Passed**
No blocks found with rotated or reversed orientation

_____

✅ 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

**Passed**
All tunable block parameters are defined as 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 usage of recommended settings for Lookup Table blocks to prevent unexpected results.

**Passed**

All Lookup Table blocks have recommended settings.

_____

✅ 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

Not Run

_____

✅ 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

Not Run

_____

✅ 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

Not Run

---

 Check output data type of operation blocks

jc_0651: Implementing a type conversion

Identify operation blocks that specify output data type.

**Passed**

No operation blocks found that explicitly specify output data type.

---

 Check Model Description

Identify layers in the model having inconsistent description format.

**Warning**

Following layers do not have model descriptions:

- FinalModel

- FinalModel/Subsystem

**Recommended Action**

Consider adding model description for all the layers.

---

 Check for consistency in model element names

Check if model elements connected to a signal are following consistent naming.

**Passed**

Model elements connected to a signal are following consistent names.

---

✅ Check for sample time setting

Check if sample time property of a block is set to -1 (inherited).

**Passed**

All permitted blocks have sample time set to -1 (inherited).

_____

✅ Check usage of Sum blocks

Identify Sum block usage that can affect readability.

**Passed**

No violations of the guideline found with the usage of the Sum block.

_____

✅ Check position of signal labels

Identify inappropriately placed signal labels.

**Passed**

No signals found with inappropriately placed labels.

_____

✅ 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.

_____

410

### Check fundamental logical and numerical operations
Not Run

___

### Check signal flow in model
Identify subsystems which do not have a signal flow from left to right.

**Passed**

No subsystems found with inappropriate signal flow.

___

### Check usage of vector and bus signals
Not Run

___

### Check connections between structural subsystems
Not Run

___

### Check position of conditional blocks and iterator blocks
Identify conditional and iterative blocks that are positioned inconsistently in the model.

**Passed**

The conditional and iterative blocks are correctly placed in the model.

___

### Check signal line connections
Identify intersections and overlaps of signals in a model.

**Passed**

No signal intersections or overlaps found.

___

### Check scope of From and Goto blocks
Not Run

___

### Check for division by zero in Simulink
Not Run

___

411

✅ 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 ❌0 ⚠0 ☑0 ✅46 ▤6

_____

✅ 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

Not Run

_____

📋 Check usage of unary minus operations in Stateflow charts

Not Run

_____

✅ 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

Not Run

_____

413

✅ 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.

414

**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.

416

**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.

417

| 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

Not Run

_____

✅ 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

Not Run

_____

✅ 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.

_____

420

✅ 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

Not Run


📁 *MATLAB Functions* 🚫0 ❌0 ⚠1 📊0 ✅2 📋1

_____

⚠ 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.



**Warning**


The following MATLAB Functions have interfaces with inherited complexity, data type, or size properties:


421

| MATLAB Function | Inherited interfaces | | |
|---|---|---|---|
| FinalModel/Subsystem/MATLAB Function | **Interface element** | **Property** | **Specified value** |
| | bg<br><br>(Input) | Size | -1 |
| | | Type | Inherit: Same as Simulink |
| | | Complexity | Inherited |
| | y<br><br>(Output) | Size | -1 |
| | | Type | Inherit: Same as Simulink |
| | | Complexity | Inherited |
| | e<br><br>(Input) | Size | -1 |
| | | Type | Inherit: Same as Simulink |
| | | Complexity | Inherited |
| | 9 issues | | |

**Recommended Action**

Explicitly define complexity, data type, and size properties for inports, outports, and parameters of MATLAB Functions identified in the results. If applicable, make the following modifications in the Property Inspector or Model Explorer of the MATLAB Function Editor:

- Change complexity from 'Inherited' to 'On' or 'Off'

- Change type from 'Inherit: Same as Simulink' or 'Inherit: From definition in chart' to an explicit type

- Change size from '-1' (inherited) to an explicit size

_____

✅ 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 global variables 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
    Not Run

📁 Simulink Code Inspector compatibility checks    ⛔0 ❌17 ⚠️0 🔧0 ✅0 ☰50
_____

❌ *Check code generation settings*


Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check data import and export settings*


Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check diagnostic settings*


Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check hardware implementation settings*


Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check math and data types settings*


Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

❌ *Check solver settings*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check for unconnected objects in the model*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check system target file setting*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check function specification setting*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

⬇ *Check for usage of fixed-point instrumentation*
Not Run

_____

❌ *Check for unsupported blocks*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

*Check storage class for workspace variables*

Not Run

_____

*Check GetSet storage class for workspace variables*

Not Run

_____

*Check for sample times in the model*

Not Run

_____

*Check usage of Sources blocks*

Not Run

_____

*Check usage of Signal Routing blocks*

Not Run

_____

*Check usage of Math Operations blocks*

Not Run

_____

*Check usage of Signal Attributes blocks*

Not Run

_____

*Check usage of Logical and Bit Operations blocks*

Not Run

_____

*Check usage of Lookup Tables blocks*

Not Run

_____

*Check usage of User-Defined Function blocks*

Not Run

_____

*Check usage of Ports and Subsystems blocks*

Not Run

_____

*Check usage of Discontinuities blocks*

> Not Run

_____

*Check usage of Sinks blocks*

> Not Run

_____

*Check usage of Discrete blocks*

> Not Run

_____

*Check usage of root Outport blocks*

> Not Run

_____

*Check for unsupported Signal Conversion blocks automatically inserted at signals entering block input ports*

> Not Run

_____

*Check usage of buses*

> Not Run

_____

*Check for usage of synthesized local data stores*

> Not Run

_____

*Check usage of global data stores*

> Not Run

_____

*Check global data stores' name shadow*

> Not Run

_____

*Check conditional input branch execution setting*

> Not Run

_____

*Check usage of Stateflow blocks*

Not Run

_____

*Check for Stateflow machine data*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

*Check for Stateflow machine events*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

*Check usage of Stateflow charts*

Not Run

_____

*Check usage of Stateflow data*

Not Run

_____

*Check usage of Stateflow events*

Not Run

_____

*Check usage of Stateflow states*

Not Run

_____

*Check usage of Stateflow junctions*

Not Run

_____

*Check usage of Stateflow transitions*

Not Run

_____

*Check usage of Stateflow graphical functions*

Not Run

_____

*Check usage of Stateflow truth tables*

Not Run

_____

*Check Loop unrolling threshold setting*

Not Run

_____

*Check destinations of If and Switchcase blocks*

Not Run

_____

*Check for root Outport blocks that have non-auto storage class*

Not Run

_____

*Check for Terminator blocks that connect to Model block outports*

Not Run

_____

*Check for unsupported propagation of initial condition values*

Not Run

_____

*Check data type replacement names*

Not Run

_____

*Check usage of MATLAB Function Blocks*

Not Run

_____

*Check usage of Data in MATLAB Functions*

Not Run

_____

*Check usage of Code in MATLAB Functions*

<span style="color:red">Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.</span>

_____

❌ *Check MATLAB Code Analyzer messages*

<span style="color:red">Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.</span>

_____

*Check for multiple sample times in model used as a model reference target*
Not Run

_____

*Check Treat each discrete rate as a separate task setting*
Not Run

_____

*Check model for commented out blocks*
Not Run

_____

*Check model for void_void subsystems that use the same function name*
Not Run

_____

*Check n-D Lookup Table blocks for incompatible breakpoint data type*
Not Run

_____

*Check model for reusable subsystems that use the same function interfaces*
Not Run

_____

*Check for usage of shared synthesized local data stores*
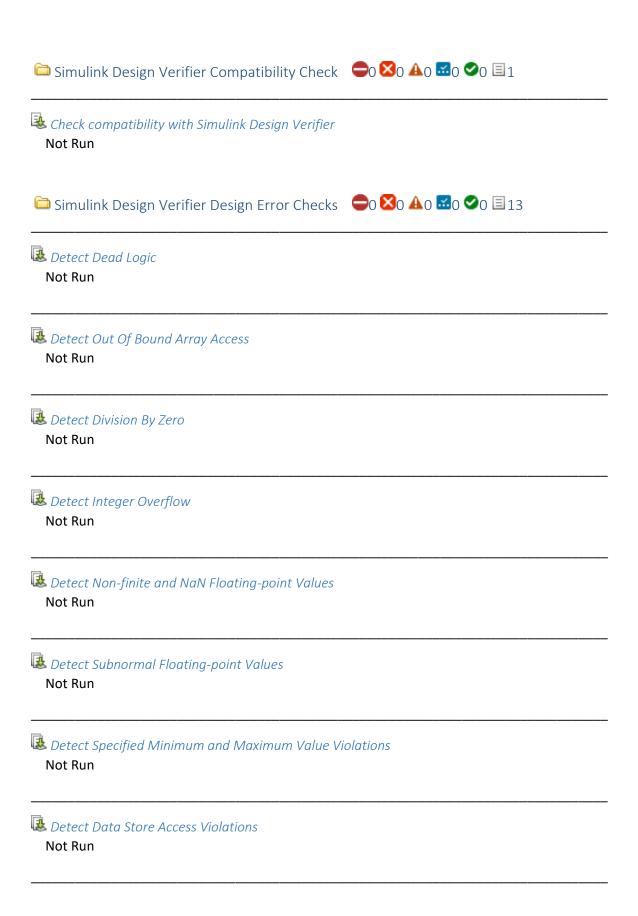Not Run

_____

❌ *Check the code generation folder structure for the model*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

❌ *Check for unsupported Code Mapping settings*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

*Check model for compiled and graphical block sorted order*
Not Run

_____

*Check usage of String blocks*
Not Run

_____

*Check usage of shared utilities*
Not Run

_____

❌ *Check model arguments for storage classes*

Supported compiler not detected. You can install the freely available MinGW-w64 C/C++ compiler; see Install MinGW-w64 Compiler. For more options, visit https://www.mathworks.com/support/compilers.

_____

*Check usage of Stateflow MATLAB action language*
Not Run

📁 Frequency Response Estimation   🚫0 ❌0 ⚠0 📊0 ✅0 📄1

_____

*Identify time-varying source blocks interfering with frequency response estimation*
Not Run

431

📁 Simulink Design Verifier Compatibility Check  ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤1

_____

📥 *Check compatibility with Simulink Design Verifier*
    Not Run



📁 Simulink Design Verifier Design Error Checks  ⛔0 ❌0 ⚠0 ☑0 ✅0 ▤13

_____

📥 *Detect Dead Logic*
    Not Run

_____

📥 *Detect Out Of Bound Array Access*
    Not Run

_____

📥 *Detect Division By Zero*
    Not Run

_____

📥 *Detect Integer Overflow*
    Not Run

_____

📥 *Detect Non-finite and NaN Floating-point Values*
    Not Run

_____

📥 *Detect Subnormal Floating-point Values*
    Not Run

_____

📥 *Detect Specified Minimum and Maximum Value Violations*
    Not Run

_____

📥 *Detect Data Store Access Violations*
    Not Run

_____

*Detect Block Input Range Violations*

Not Run

_____

*Detect Usage of remainder and reciprocal operations - hisl_0002*

Not Run

_____

*Detect Usage of square root operations - hisl_0003*

Not Run

_____

*Detect Usage of log and log10 operations - hisl_0004*

Not Run

_____

*Detect Usage of Reciprocal Square Root Blocks - hisl_0028*

Not Run