

# Altair Activate 2020.1

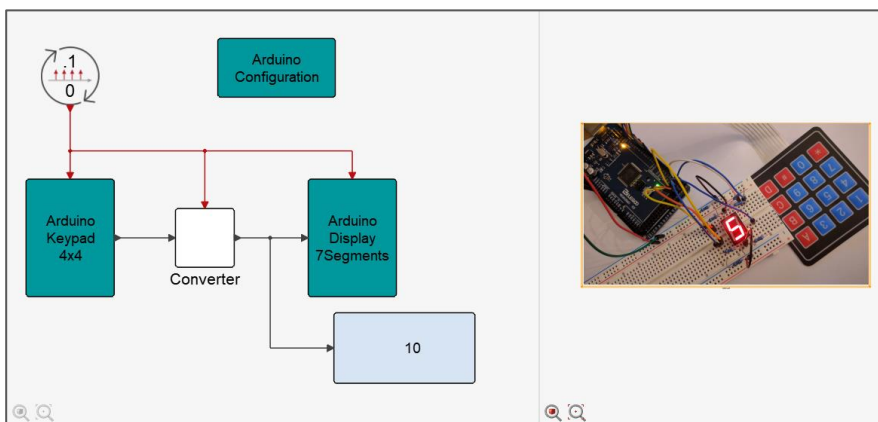
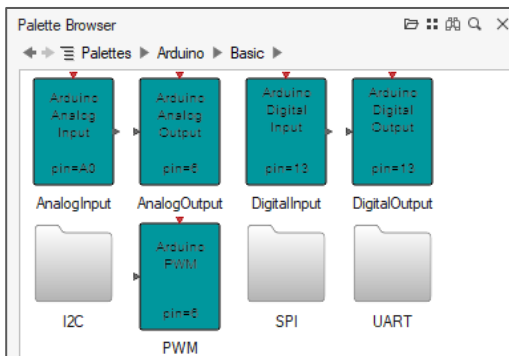
Altair Activate 2020.1 includes the following new features and enhancements.

**Note:** \* indicates Business Edition of Activate.

## New Features: Block Libraries

### Arduino Block Library\*

Activate 2020.1 introduces an Arduino block library to facilitate the modeling, simulation and code generation for diagrams that connect to Arduino boards. Arduino ([www.arduino.cc](http://www.arduino.cc)) provides an environment, boards and software to design and develop electronics-based applications.



## Additional Enhancements for Block Libraries

- The Diag block now accepts matrix inputs.
- A logger was added for Motion Solve blocks.
- The Maxmin block performance is improved.
- The Sum block is faster (as well as the Bias block which uses the Sum block).
- The speed of the Product block is improved.
- Hydraulics library: Pumps and Motors are updated with an additional leakage port.\*
- Fluids added to Hydraulics library: HLP32, Pentosin, Skydrol, Engine Oil.\*

## New Features: Co-Simulation\*

### Safe Mode for Co-Simulation\*

Co-simulation with Altair MotionSolve and Altair Flux now features an IPC-based Safe Mode to communicate with Activate. The Safe Mode provides you with better control during co-simulation and protects Activate in the event of an unexpected stop in a simulation run.

## Additional Enhancements for Co-Simulation\*

- Updated extrapolation parameter in Flux block.\*
- Improved handling of time instant parameters during Flux co-simulation.\*
- The Extended Definitions reference guide includes a new chapter on the Flux co-simulation process.\*

## New Features: Block Diagram Editor and User Experience

### Save Copy As

The **Save Copy As** option on the File menu lets you save a copy of the active model file from the current session, but does not modify or change the open model file.

### Screen Capture

The **Screen Capture** option on the File menu lets you capture an image or record a video of an Activate session.

## Additional Enhancements for Block Diagram Editor and User Experience

- The super block name is reported when context script errors occur.
- The visual display is enhanced to differentiate the block dialogs of two similar models that are opened at the same time.
- When closing *Activate*, a *Simulation in Progress* message alerts you if OML is running.
- Traceback for errors in Model or Diagram contexts is now available.
- *Activate.bat -f* now supports the SCM model as an input argument.
- Improved creation/suppression of points in the Curve Editor.
- The Curve Editor supports X as vector and Y as a matrix if X and Y have the same number of columns.

## General Enhancements: OML Support

Activate reports the lines where errors exist in an OML script. For example, errors in a context or initialization can be easily found.

## General Enhancements: FMU Support

### FMU Import

- Improved speed for Safe Mode especially for Linux when using shared memory.
- FMU support includes try-mode co-simulation (solving algebraic loops in FMU/CS).

### FMU Export\*

- FMU Export for Pproject FMUs.\*
- Support includes input and output interpolation (used for TryMode).\*
- Support includes set/getState used for TryMode.\*
- New solvers RK4 and Trapezoid added for FMU Co-simulation.\*

## General Enhancements: Code Generation\*

- P-Project FMU for co-simulation supports **Extrapolate output** and **Interpolate Input** \*
- Time (global) added to P codegen C code.\*
- Block names included the generated C code.\*
- Empty functions are removed in the generated C P-code.\*

## Resolved Issues

- Undo operation after code generation of a super block is failing and the model is broken.
- Curve editor indices should not start from 0.
- Unexpected messages in command window when opening `Scope` block parameter dialog.
- Model with two input event ports both numbered 1 can be created after super block extension.
- Press Ctrl+C while a loop is running will print the previous simulation statistics.
- Block dialog width issue when the block has hidden parameters.
- Code generation error for FMU using P-code generator.\*
- Mask Editor error when moving lines.
- Curve Editor column headers are incorrect.
- A space in `MotionView` filename causes application error out (co-simulation with `MotionSolve`).\*
- Crash can happen when performing linearization of a super block.
- In the `HstPyFit` block the "Select Responses" GUI should not pop up when you click Cancel in Open File dialog.\*
- Curve Editor should not disable scrollbar when opening x, y data as oml variables.
- Unable to read csv file in Curve Editor.
- Save All should update the model name asterisk mark.
- Application can crash when you click the Run button in the OML editor.
- Using an empty file in the Curve Editor in the `FromCSV` block can cause the application to crash.
- Overflow saturate in `Sum` and `Bias` blocks doesn't work.
- `HstPyFit` block license checkout fails when defining a license file/server in the license setup dialog.\*
- `MathExpression` block doesn't support max operation with 2 input arguments.
- Issue when closing the OML Editor after modifying the content.
- Cannot read external files with `CombiTable` block.
- Profiling tool doesn't work correctly on Linux (accumulated timer is wrong).
- Scalar type for parameters not working properly (inside tables).
- FMU export of Spice blocks can create FMUs that are not compliant with the FMU Checker.\*
- Annotation display issue (extra space between characters)
- Always active is not supported by the `FromCSVnoHeader` block.

- Co-Simulation with Flux should not change PATH environment variable after simulation ends.\*
- Cannot close Activate when there is an unsaved .oml script in the session.
- Taking a screenshot in .jpeg format doesn't work.
- HyperSpice block display issue in the Model Report.
- Model can fail to simulate due to round-off error in the Modelica Compiler.
- Block port labels are truncated (display issue).
- Generating C block (simulation function) for atomic super block fails.
- Modelica Electrical.Analog.Interfaces.negative pin has incorrect icon.
- Pressing Ctrl+C to interrupt OML execution should not display messages cleared earlier.
- Modelica.Mechanics.Multibody.Interfaces.Frame icons issue.
- Unicode characters are not supported in error messages.
- Modelica-Activate initialization problem if the ToModelica initial value is not correct.
- Fix issue with long tooltips displayed on a single line in the block dialogs.