OpenECU Compatibility with Third Party Tools

Release 2.6.0 (r2016-1)

Table of Contents

Chapter 1. Third party tools

1.1. Third party tool requirements

OpenECU has been tested to work with Windows XP SP3 and Windows 7 SP1, 32-bit and 64-bit. OpenECU is not compatible with Windows Vista, Windows 8 or earlier versions than Windows XP SP3. At the moment, OpenECU is only compatible with five versions of 64-bit MATLAB (2013b, 2014a, 2014b, 2015a and 2015b).

1.2. Third party tool requirements — C-API

For C based development, OpenECU requires (at a minimum) one of the following compiler tools:

- Wind River Diab compiler
- GCC Compiler

> **Note**
>
> GCC is an optional component in the OpenECU installation (installed by default). Additionally, GCC support is currently in a beta stage. As such, there a number of known limitations for compiling an OpenECU application with GCC. Please see the “Integration notes for third party tools” of the “Release notes” for a list of known issues building with GCC for further details.

To program and calibrate an OpenECU with an application, OpenECU integrates with the following calibration tools. Only one calibration tool is required:

- PiSnoop
- ATI VISION
- ETAS INCA
- Vector CANape

1.3. Third party tool requirements — Sim-API

For Simulink model based development, OpenECU requires (at a minimum) the following MathWorks tools:

- MATLAB (base product)
- Simulink (to develop the models)
- Simulink Coder (to generate C code from the models), or Real-Time Workshop for version R2008b

- MATLAB Coder for versions R2011a or later (Simulink Coder depends on this)

In addition, if you need to add state diagrams to the model, then you will also need:

- Stateflow (to develop state flow diagrams inside your model)
- Stateflow Coder (to generate C code from the state flow diagrams inside your model) for version R2008b. In R2011a and later, Simulink Coder fulfils this function.

Simulink Coder generates C code which does not lend itself to efficient repeatable testing. When creating a production version of your product, you may need better control of the structure of the C code generated from the model to reduce the cost of testing the C code against any industry standards. Under these circumstances you will also need:

- Embedded Coder (to generate C code from the models), or Real-Time Workshop Embedded Coder for version R2008b.

To compile the generated C code (from either Simulink Coder or Embedded Coder), you will need one of the following compilers:

- Wind River Diab compiler
- GCC compiler (free compiler but with known issues)

To program and calibrate an OpenECU with an application, OpenECU integrates with the following calibration tools. Only one calibration tool is required:

- PiSnoop
- ATI VISION
- ETAS INCA
- Vector CANape

1.4. Third party tool requirements — compatibility

In summary, the following third party tools are compatible with this version of OpenECU:

Table 1.1. Third party tool compatibility

Third party tool	Compatible versions
Operating systems	
Microsoft Windows [a]	XP SP3 (32-bit) Win7 SP1 (32-bit) Win7 SP1 (64-bit)
Modelling and code generation tools	
MathWorks MATLAB	R2008b, R2011a, R2011b, R2012a, R2012b, R2013a, R2013b, R2014a, R2014b, R2015a, R2015b (32-bit) R2013b, R2014a, R2014b, R2015a, R2015b (64-bit)
MathWorks Simulink	
MathWorks MATLAB Coder	R2011a, R2011b, R2012a, R2012b, R2013a, R2013b, R2014a, R2014b, R2015a, R2015b (32-bit) R2013b, R2014a, R2014b, R2015a, R2015b (64-bit)
MathWorks Simulink Coder [b]	
MathWorks Embedded Coder	
MathWorks Real-Time Workshop	R2008b (32-bit only)

Third party tool	Compatible versions
MathWorks Real-Time Workshop Embedded Coder	
MathWorks Stateflow Coder	
Compiler tools	
Wind River Diab C compiler	v5.5.1.0, v5.8.0.0, v5.9.0.0 for M110, M220, M221, M250, M460 and M461 targets v5.9.0.0 for M670 target
GCC Compiler [c]	v4.7.3 for M110, M220, M250, M460, M461 and M670 targets
Reprogramming, data logging and calibration tools	
PiSnoop	Any version
ATI Vision [d e]	v2.5 through v4.0
ETAS INCA	v7.1.9
Vector CANape	v8.0 through v13.0

[a] OpenECU has been tested to work with Windows XP SP3 and Windows 7 SP1, 32-bit and 64-bit. OpenECU developer software does not support earlier versions of Windows than XP (SP3), does not support Windows Vista or Windows 8. Windows 10 support will be added in a later release.

OpenECU developer software may not function correctly on encrypted drives. OpenECU developer software must be able to create files on the host file system. If using an encrypted drive, be sure that permission settings will allow OpenECU to create files. Pi Innovo cannot provide support for issues with encrypted drives.

[b] Mathworks Simulink Coder includes functionality of RTW and Stateflow Coder.

[c] OpenECU has only been tested using GCC Compiler version 4.7.3 and is in the beta stage. As such, there are a number of known issues to keep in mind when compiling an OpenECU application using GCC. For further details, please see "Integration notes for third party tools" for a list of known issues.

[d] The OpenECU method of configuring ATI Vision uses standardised ASAP2 files. As a result, all future versions of Vision are expected to be backwardly compatible (e.g., version 3.7 and version 4.0 are known to be compatible).

[e] The following Vision toolkits are typically used when working with OpenECU: *Data Acquisition Toolkit*, *Calibration Toolkit*, *Universal ECU Interface Standard Toolkit*, *APOLLO Data Analysis Toolkit*, *CAN Interface Toolkit* and *HORIZON Scripting/Remote API Toolkit*. In particular, the *HORIZON Scripting/Remote API Toolkit* is required if OpenECU builds are to generate Vision strategy files (`.vst`).

Some third party tools have been marked deprecated and support for these tools will be removed in a future release of OpenECU.

Third party tool	Replacement
MathWorks MATLAB R2008b	MATLAB R2012a (see Pi Innovo's website [http://www.pi-innovo.com/support-center/compatibility] for a complete list of supported versions of MATLAB).
MathWorks MATLAB R2011a	
MathWorks MATLAB R2011b	

1.5. Third party tools — contact information

If you need to contact a third party vendor for purchasing information, then either contact the vendor directly for a general quote, or use the details provided here mentioning OpenECU.

1.5.1. ATI Vision

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1.5.2. Wind River (Diab) compiler

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