Freescale Semiconductor

Release Notes

Document Number:
MBDTB-ZVC-RN

Model Based Development Toolbox MagniV for S12ZVC Family of Processors

Version 1.0.0
Freescale Semiconductor, Inc.

1. Revision History

The following modifications to this release note have been made relative to the note provided with the Model Based Development Toolbox v1.0.0 installation:

Date	Description
Oct 13, 2016	v1.0.0 release

An updated version of this document is available on Model Based Development Toolbox product support page.

Contents

1. Revision History 2
2. About this release....2
3. System Requirements 3
4. Release Contents....4
5. Product Features 6
6. Known Issues....6

2. About this release

2.1 Version information

This release note provides important information for users of Model Based Development Toolbox. You are encouraged to read this document to become familiar with this release's supported targets, new features, errata with workarounds, and other useful information.

© 2016 Freescale Semiconductor, Inc. All rights reserved

2.2 Licensing

This release is distributed under an End-User License Agreement. The EULA is displayed during product installation. Please read the contents of the document carefully before using this product.

Please refer to *Model_Based_Dovelopment_Toolbox_License_Installation.pdf* for more information on how to request and install the license.

2.3 Getting Help

Product documentation is included with the product layout in '*help*' folder.

To order NXP products or literature, consult your local sales representative.

For technical support please sign on to the following NXP Model Based Software Design Tools Community: https://community.nxp.com/community/mbdt

3. System Requirements

The minimum recommended PC platform is:

- *Windows® OS*: Intel® Pentium® 4 processor, 2 GHz or faster, Intel® Xeon™, Intel® Core™, AMD Athlon™ 64, AMD Opteron™, or later
- At least 4 GB of RAM
- At least 3 GB of free disk space.
- Internet connectivity for web downloads.

Operating System Hosts

Windows			
Host OS	**SP Level**	**32-bit**	**64-bit**
Windows 7	SP1	X	X
Windows 8.1	U1	X	X
Windows 10		X	X

NOTE It is recommended (although not required) that all product maintenance operations be done with administrative privileges.

4. Release Contents

4.1 MCU Support Matrix

The following hardware configuration targets are supported:

Part Label	Memory Configuration (Flash/RAM)	Package Supported	Bus Clock Frequencies Supported	XTAL Frequencies Supported
S12ZVCA	192KB / 12KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVCA	128KB / 8KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVCA	96KB / 8KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVCA	64KB / 4KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVCA	192KB / 12KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVCA	128KB / 8KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVCA	96KB / 8KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVCA	64KB / 4KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	192KB / 12KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	128KB / 8KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	96KB / 8KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	64KB / 4KB	64 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	192KB / 12KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	128KB / 8KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	96KB / 8KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16
S12ZVC	64KB / 4KB	48 LQFP	32 Mhz	IRC, 4, 8, 10, 16

4.2 MATLAB Releases Supported

Product	Version Compatibility	Required or Recommended
MATLAB	R2015aSP1, R2015b, R2016a, R2016b	Required
Simulink	R2015aSP1, R2015b, R2016a, R2016b	Required
MATLAB Coder	R2015aSP1, R2015b, R2016a, R2016b	Required
Embedded Coder	R2015aSP1, R2015b, R2016a, R2016b	Required

Simulink Coder	R2015aSP1, R2015b, R2016a, R2016b	Required
Stateflow	R2015aSP1, R2015b, R2016a, R2016b	Recommended
IEC Certification Kit (for ISO 26262)	R2015aSP1, R2015b, R2016a, R2016b	Recommended

4.3 Compiler Support

Compiler	Versions Tested
Cosmic for Freescale S12Z	4.3.9
CW for MCU	10.6.4

4.4 Supported Peripherals/Devices of MCU

- GPIO - Digital I/O Blocks
- ADC - Analog-to-Digital Converter
- DAC - Digital-to-Analog Converter
- ACMP - Analog Comparator
- SCI – Serial Communication Interface
- SPI – Serial Peripheral Interface
- MSCAN – Multi-Scalable Controller Area Network
- PWM – Pulse Width Modulation
- TIM – Timer output
- CAN Physical Layer Module
- I2C – Inter Integrated Circuit

4.5 Documentation

User Manual
Explains how to install and configure the toolbox and details the main features such as Simulink blocks for every supported peripheral and modes of operation (Simulation/SIL/PIL/Target).

Installation Quick-Start
Explains how to install and configure the product.

License Installation & Management Manual
Explains how to obtain and manage the license for the product..

5. Product Features

FreeMASTER Support

The Model Based Development Toolbox has built-in code generation support for FreeMASTER through Serial (SCI) and CAN interface support. The CAN interface works with Vector CAN hardware, and IXAAT CAN interface cards. All features of FreeMASTER are supported with exception of flash programming capability.

On-Target Profiling Support

The Model Based Development Toolbox provides blocks to be used for On-Target function profiling that returns results in units of clock cycles of execution per execution iteration.

Processor-In-the-Loop Support (PIL)

The Model Based Development Toolbox provides PIL support for purposes of ASIL software development processes, “Model PIL Block” (Model Reference) and “PIL Block” modes of operation are supported “Top Model PIL” mode is not supported. PIL contains limited support for peripheral blocks. No support for interrupts exist in supported PIL modes of execution, therefore no blocks with interrupts are supported in PIL mode.

Boot Loader

- Internal Boot Loader is a standalone application which requires the Microsoft .NET Framework version 4.0 installed on PC, It may be required to download the package from http://www.microsoft.com/download and install if you are going to use PIL and internal Boot Loader.
- The board should be configured to work with BAM to use Internal Boot Loader. Please check board documentation.

Example Models

Example models for different peripheral and motor control blocks are located in the install directory / examples. These are working examples of different configurations and use cases of peripheral blocks.

Miscellaneous

- It is possible to add the user's files into a project supported using the user defined script, please refer to User Manual for details.
- Model Referencing is supported but there are limitations with ISRs, please refer to User Manual for details.

6. Known Issues

Please consult the latest version of this document for the accurate list of known issues, available on Model Based Development Toolbox product support page.

The following defects are known to be present in this release. Wherever applicable, the workaround is listed below defect description.

MBD Toolbox	
AST-226	A different port number than the one set in model is used for downloading Workaround: *The first COM port is used so make sure the SCI connection of interest is the first COM port of the machine.*
1404465	Invalid payload size (123456) received during SIL/PIL communication between Simulink and the target application. Check the rtiostream implementation for the target application. Workaround: http://www.mathworks.com/support/bugreports/1404465
Boot Loader	
AST-186	RAppID downloader crash after building model if not COM port is correctly selected Workaround: *Retry the download after setting the correct port or reconnecting the SCI cable.*
Freemaster	
NTR	

How to Reach Us:

Home Page:
www.nxp.com

Web Support:
www.nxp.com/support

Information in this document is provided solely to enable system and software implementers to use Freescale Semiconductor products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits or integrated circuits based on the information in this document.

Freescale Semiconductor reserves the right to make changes without further notice to any products herein. Freescale Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Freescale Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. “Typical” parameters that may be provided in Freescale Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including “Typicals”, must be validated for each customer application by customer’s technical experts. Freescale Semiconductor does not convey any license under its patent rights nor the rights of others. Freescale Semiconductor products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Freescale Semiconductor product could create a situation where personal injury or death may occur. Should Buyer purchase or use Freescale Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold Freescale Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Freescale Semiconductor was negligent regarding the design or manufacture of the part.

MATLAB, Simulink, Stateflow, Handle Graphics, and Real-Time Workshop are registered trademarks, and TargetBox is a trademark of The MathWorks, Inc.
Microsoft and .NET Framework are trademarks of Microsoft Corporation.
Flexera Software, Flexlm, and FlexNet Publisher are registered trademarks or trademarks of Flexera Software, Inc. and/or InstallShield Co. Inc. in the United States of America and/or other countries.
Freescale, the Freescale logo, CodeWarrior and ColdFire are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat. & Tm. Off. Flexis and Processor Expert are trademarks of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners

©2016 Freescale Semiconductor, Inc. All rights reserved.