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Chapter 1 General Introduction

The Diodes Incorporated (Diodes) Keil[®] MDK ICE Driver works with the Diodes debugger and provides a debug interface for Keil µVision5 MDK IDE. By integrating the debugger with Keil's IDE, users can develop their projects and download the program into the target board with this ICE driver and do source level debugging.

Installation

In this section, we will guide you on how to install the <u>Diodes Keil MDK ICE Driver</u> for Windows on your computer. Firstly, we'll outline system requirements, and then, introduce the steps of installation.

Note: You must first install Keil µVision MDK.

System Requirements

The current version of the tool runs in Windows Win10. The proposed minimum system requirements are:

- CPU clock: 600MHz
- Capacity of memory: 128 MB
- Free hard disk space: 2GB

Steps

Take the following steps, to install the driver on your computer:

1. Run the installation file.

Custom Setup

- 2. Choose destination location. Select folder where setup will install files.
- 3. Select the option "Will be installed on local hard drive".

Biodes Keil MDK ICE Driver 1.0.0 Setup

Select the way you want features to be installed.



Click the icons in the tree below to change the way features will be installed.



4. Select the folder where "BIN" folder was installed.

Note: BIN is specify the path to the binary folder of the toolchain in use from Arm Keil µVision User's Guide.

🖟 Diodes Keil MDK ICE Driver 1.0.0 Setup		-		\times
Choose Destination Location Select folder where setup will install files.		ж	DE	S
Please select the folder where BIN was installed.				
C:\Keil_v5\ARM\BDI\ Change				
Bac	k	Next	Can	cel

- 5. Finish.
- 6. Restart Keil µVision.



Chapter 2 New project

In order to use the ICE driver you must perform the following steps:

- 1. Start Keil µVision5.
- 2. Select 'Project New Project' to new project and input the project name and path. From the combo box, select "Diodes AMS32" which is our device's database.
- 3. Select required microcontroller type you and then click "OK" to save the setting and close the dialog box.

Select Device for Target 'Target 1'	×
Device	
Diodes AMS32 Device Database	
Vendor:	
Device:	
Toolset:	
Search:	
Des <u>cription</u> :	
Oiodes AMS32M2006A	~
OK Cancel He	elp



Chapter 3 Setting

1. Select "Options for Target 'Project name'".

Project	д.	×
🖃 🌴 Project: New		
🖻 💭 Target 1	Options for Target 'Target 1'	Alt+F7
	Add Group	
	Manage Project Items	
	Rebuild all target files	
	Build Target	F7
\checkmark	Show Include File Dependencies	

2. Click the "Device" tab to check and change the microcontroller type to "Diodes AMS32 Device Database".

🞇 Options for Target 'Target 1'	\times
Device Target Output Listing User C/C++ (AC6) Asm Linker Debug Utilities Diodes AMS32 Device Database Device Database Diodes AMS32 Device Database Device: AMS32M2006A Toolset: ARM Search:	
Diodes MS32M2006A MS32M2006A The AMS32M2006A has an embedded user-programmable non volate memory (NVM), also called Flash, for storage of user code and data. NVM of AMS32M2006A composed of Program Memory and System Memory. Program Memory where is user application code stroed. The System Memory which to support the boot loader function based on user option. AMS32M2006A supports In-System-Programming (ISP function and In-Application-Programming (IAP) function for customer to update user code and data.	<
OK Cancel Defaults Help	



Diodes Incorporated's Keil MDK ICE Driver EVB User Guide

Click the "Debug" tab, from the combo box, then select "Diodes AMS32 Driver" to connect to the debug hardware. Make sure that the "Use" radio button is checked. Once those items are selected, the dialog box should look like this:

🔣 Options for Target 'FLASH'	×
Device Target Output Listing User C/C++ A C Use Simulator with restrictions Settings	sm Linker Debug Utilities
Limit Speed to Real-Time Load Application at Startup Run to main() Initialization File:	Ivert Load Application at Startup Ivert Run to main() Initialization File:
Restore Debug Session Settings Breakpoints Toolbox Watch Windows & Performance Analyzer Memory Display System Viewer	Restore Debug Session Settings Breakpoints Toolbox Watch Windows Memory Display System Viewer
CPU DLL: Parameter: SARMCM3.DLL	Driver DLL: Parameter: SARMCM3.DLL
Dialog DLL: Parameter: DARMCM1.DLL PCM0	Dialog DLL: Parameter: TARMCM1.DLL pCM0
Wam if outdated Executable is loaded Manage Component Vie	Wam if outdated Executable is loaded
OK	ncel Defaults Help

Debug Tab Step Actions:

- 1. Enable Load Application at Startup so that the µVision Debugger loads the symbolic information for your program.
- Enable Run to main() so that program can run main process by diodes debugger Click **Settings** to open the MDK Driver Settings dialog and configure the Options. 2.
- 3.

amily: Cor	532M2006A tex-M0	Device	ID: 0x0bb11477	
Debug Reset: Aut	• •	Clock R	ate: 6000 💌	
Download ✓ Verify Downlo	pad	☐ Del	oug without download	
Debug log		Erase	ype: Chip Erase	-
Download	Address	Size	Smart Download	
Download Flash	Address 0x01000000	Size 0x0000F000	Smart Download	_
Download Flash Flash	Address 0x01000000 0x02000000	Size 0x0000F000 0x00001000	Smart Download N/A N/A	_
Download Flash Flash Flash	Address 0x01000000 0x02000000 0x0F000000	Size 0x0000F000 0x00001000 0x00000010	Smart Download N/A N/A N/A	



Device Info group is used to show the current device information:

- Name The device name
- Family The device family
- **Device ID** The ID read from device
- Debug group is used to configure the current debug
 - **Reset** Whether to automatically reset the MCU
 - Clock rate Communication speed with MCU is in KHz, up to 6000KHz

Download group is used to properly configure the driver work with memories. The following settings can be specified:

- Verify Download check this option to enable the verify function. It will verify the file downloaded to the ICE with the source file automatically, if there is a difference, it will prompt you.
- **Debug without download** check this option to enable the debug without download function. It will directly enter debug section without downloading the code to memory.
- Debug Log
- Erase Type



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