

Import DAVE™ version 4 generated library sources to ARM® MDK using CMSIS® PACK

XMC™ microcontrollers
July 2016



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Purpose: Import the DAVE™ version 4 generated source files to ARM® MDK

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Prerequisites to follow the tutorial

4

Build and download MDK project to a XMC4000/1000 evaluation board

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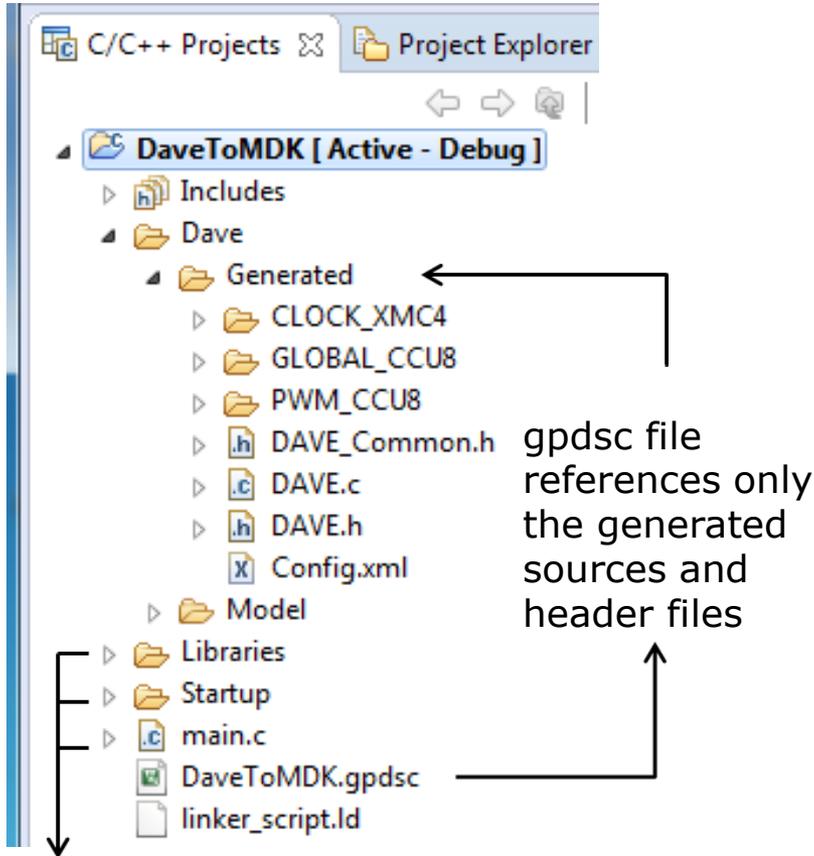
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Build and download MDK project to a XMC4000/1000 evaluation board

Purpose: Import the DAVE™ version 4 generated source files to ARM® MDK

DAVE™ project outline



- › DAVE™ version 4 is a free eclipse based development platform that can generate application libraries from DAVE™ Apps
- › The generated code is included in a DAVE™ version 4 project
- › DAVE™ version 4 can optionally generate a CMSIS® Pack compliant gpdsc file that references all generated library sources (c sources and header files) to a respective MDK µVision project)
- › The gpdsc file references only the generated sources and headers, It is expected that the user develops the user code afterwards in MDK
- › Not the full DAVE™ version 4 project is ported; to port the full DAVE™ version 4 project the existing user code has to be manually referenced

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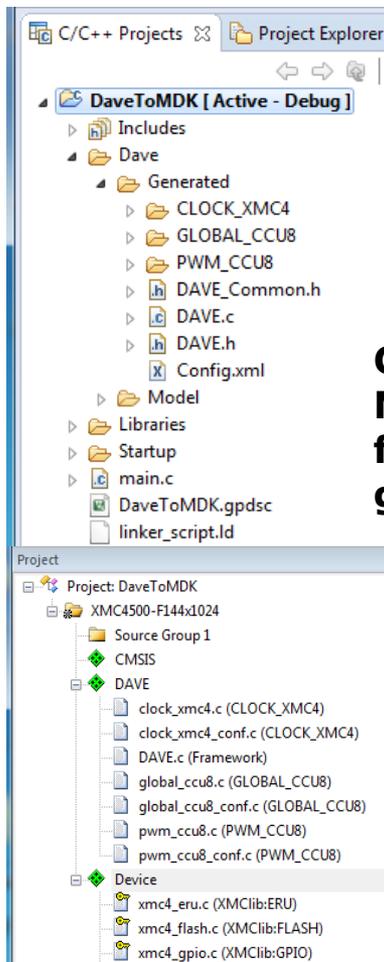
3

Prerequisites to follow the tutorial

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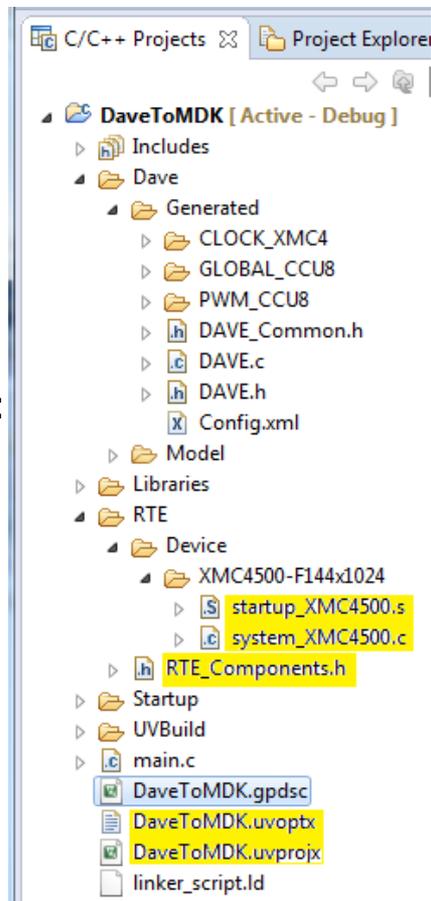
Build and download MDK project to a XMC4000/1000 evaluation board

Concept



→

Creating an MDK project from the gpdscc file



MDK relevant files (yellow) added to the DAVE™ project

Respective project view in MDK

- > In addition to the references of generated DAVE™ code the gpdscc file (an xml file) contains conditions for the selected target MCU, preprocessor commands in RTE_Components.h file and XMC Lib source file
- > Double clicking on the gpdscc file will automatically create an ARM® MDK project for the target MCU defined in the gpdscc file, and ARM® MDK compliant startup files for the target MCU will be added to the project
- > These files are added in the project folder of the DAVE™ (eclipse) project; Build in 'DAVE™' folder will now create build error, this can be avoided by excluding these files from build in the DAVE™ project

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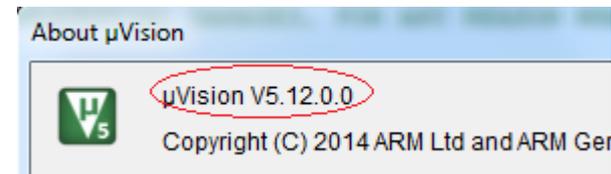
4

Build and download MDK project to a XMC4000/1000 evaluation board

Prerequisites to follow the tutorial

- > μ Vision **v5.10** ARM[®] MDK

[Download a free version](#)

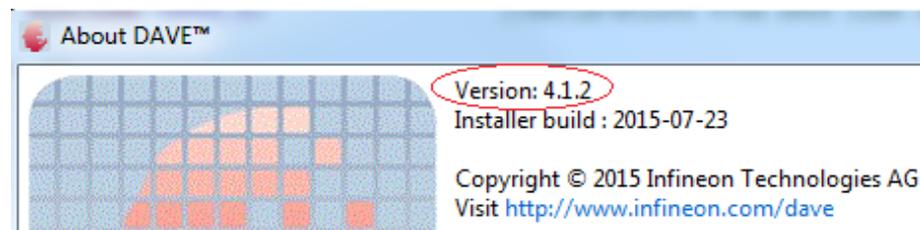


Using XMC4000/1000 PACK from v2.3.0/v2.1.0

- > DAVE[™] version 4

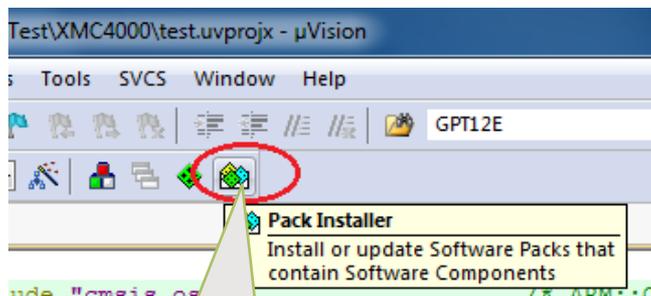
A PACK file with file extension ***gpdsc*** is created by code generation, which is dedicated for porting the DAVE[™] project to ARM[®] MDK

[Download DAVE](#)



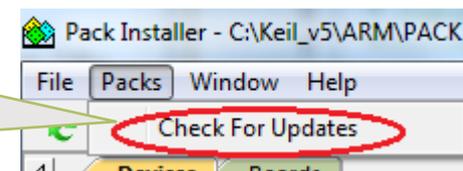
- > The following pages provide a step wise description how to import the library sources configured and generated in DAVE[™] to ARM[®] MDK

Step 1: Install the latest Infineon Device PACK



Step 1.1:
Open
**Pack
Installer**

Step 1.2:
Check for
updates of
PACK



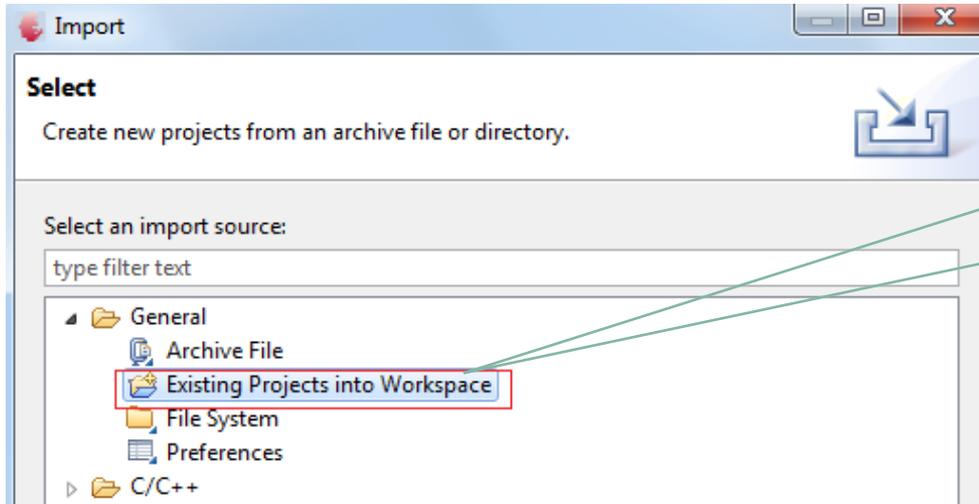
Step 1.3:
Double click
here to install
**Infineon
PACK**

Pack	Action	Descrip
[-] Device Specific	4 Packs	
+ Infineon::TLE986x_DFP	Install	Infineon
+ Infineon::TLE987x_DFP	Install	Infineon
+ Infineon::XMC1000_DFP	Up to date	Infineon
+ Infineon::XMC4000_DFP	Up to date	Infineon
[-] Generic	15 Packs	
+ ARM::CMSIS	Up to date	CMSIS (

Important: Please do not install **Keil device PACK**. If already installed, remove it

Keil::TM4C_DFP	Install	Texas Instruments Tiva C Series Device Support
Keil::V2M-MPS2_CMx_BSP	Install	ARM V2M-MPS2 Board Support PACK for Cort
Keil::XMC1000_DFP	Install	Infineon XMC1000 Series Device Support and E
Keil::XMC4000_DFP	Up to date	Infineon XMC4000 Series Device Support and E
1.0.2	Remove	Infineon XMC4000 Series Device Support and E
lwIP::lwIP	Install	lwIP is a light-weight implementation of the T

Step 2: Import an existing DAVE™ project or create a new DAVE™ project

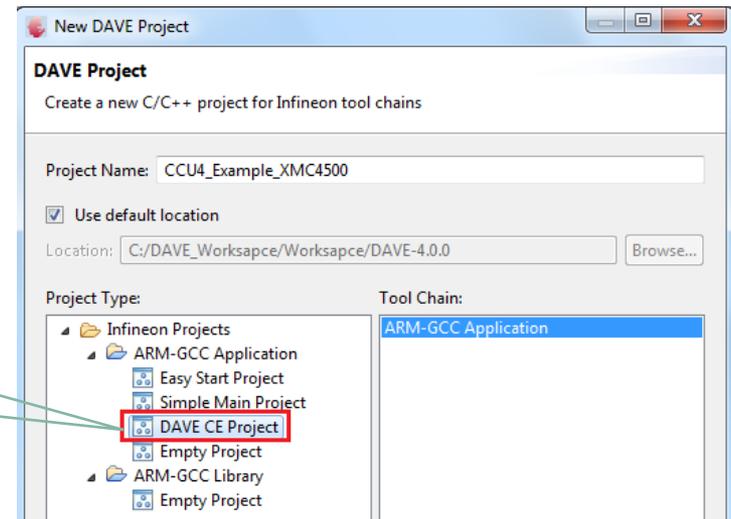


In case of existing project:

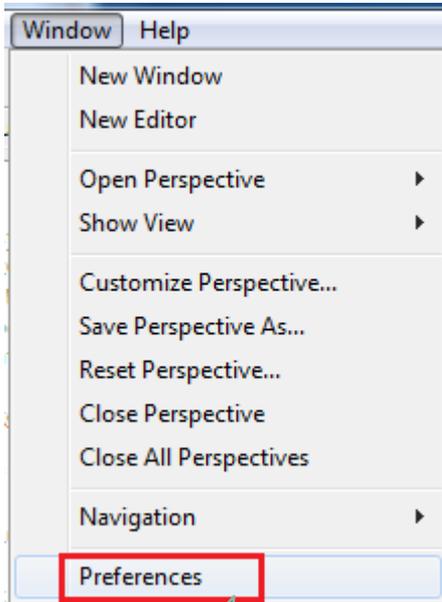
Step 2.1: Import the existing project

In case of new project:

Step 2.1: Define a new DAVE™ CE Project

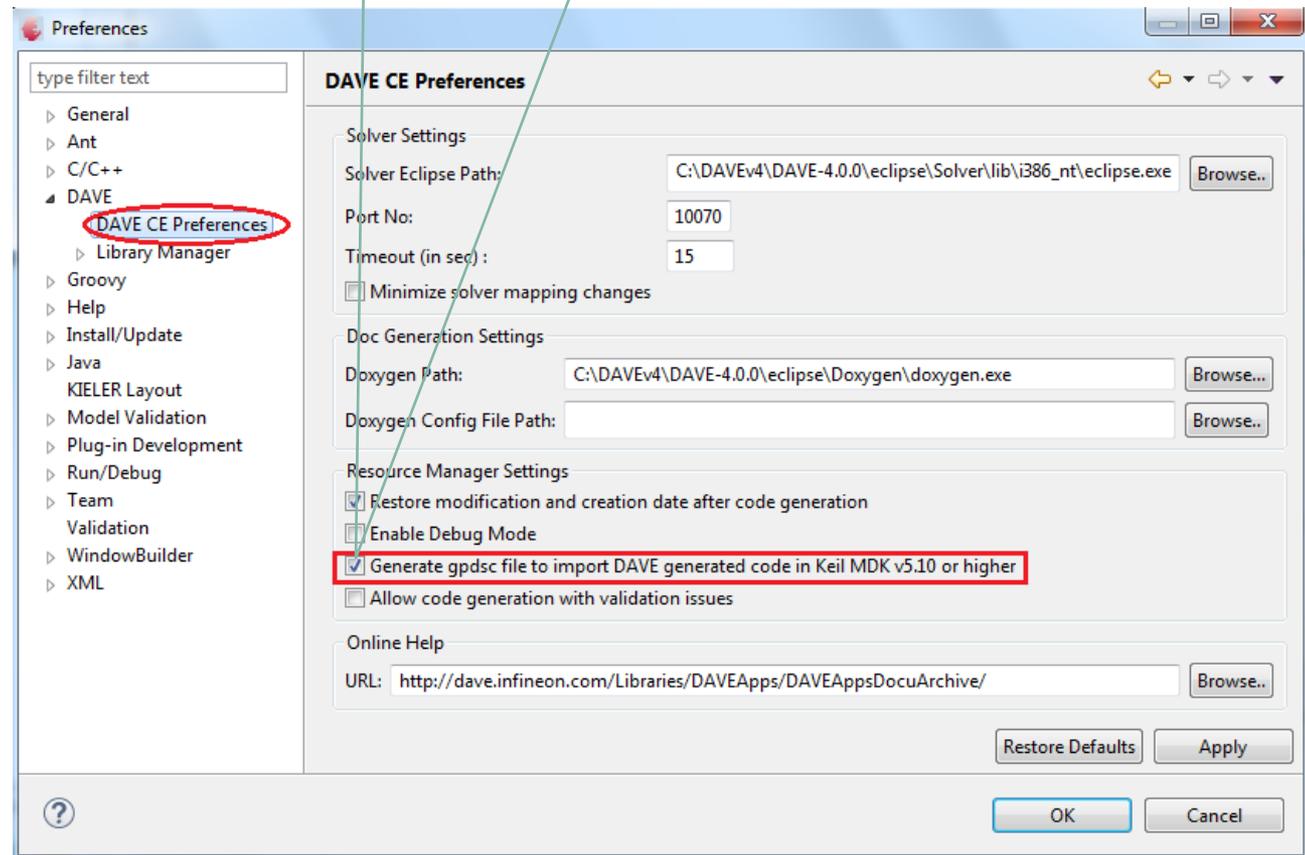


Step 3: Enable "Generate gpdsc file" in DAVE™



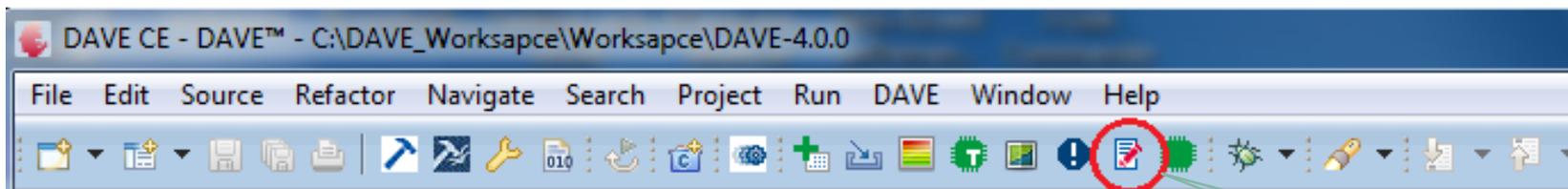
Step 3.1: Open Preferences window

Step 3.2: Select Generate gpdsc file



Step 4: In case of new DAVE™ project

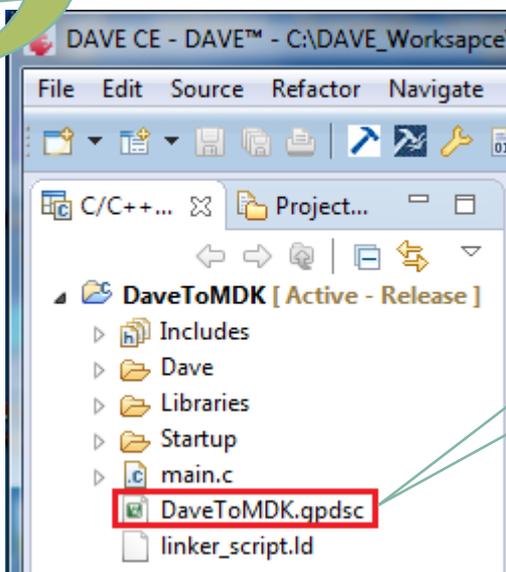
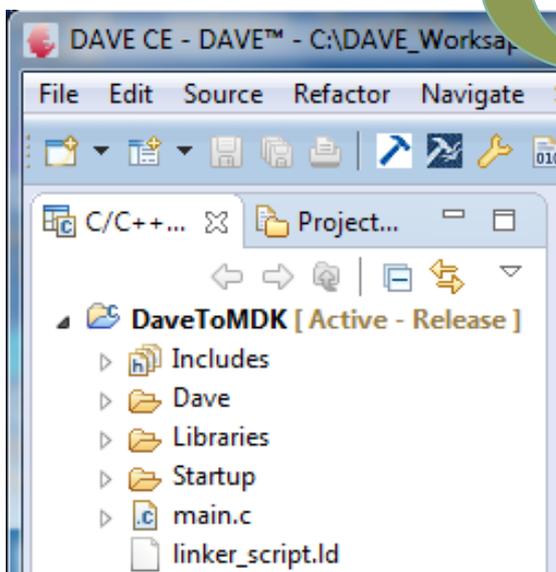
Note: Before continuing with step 4.1, select and configure the required DAVE™ Apps



Before code regeneration

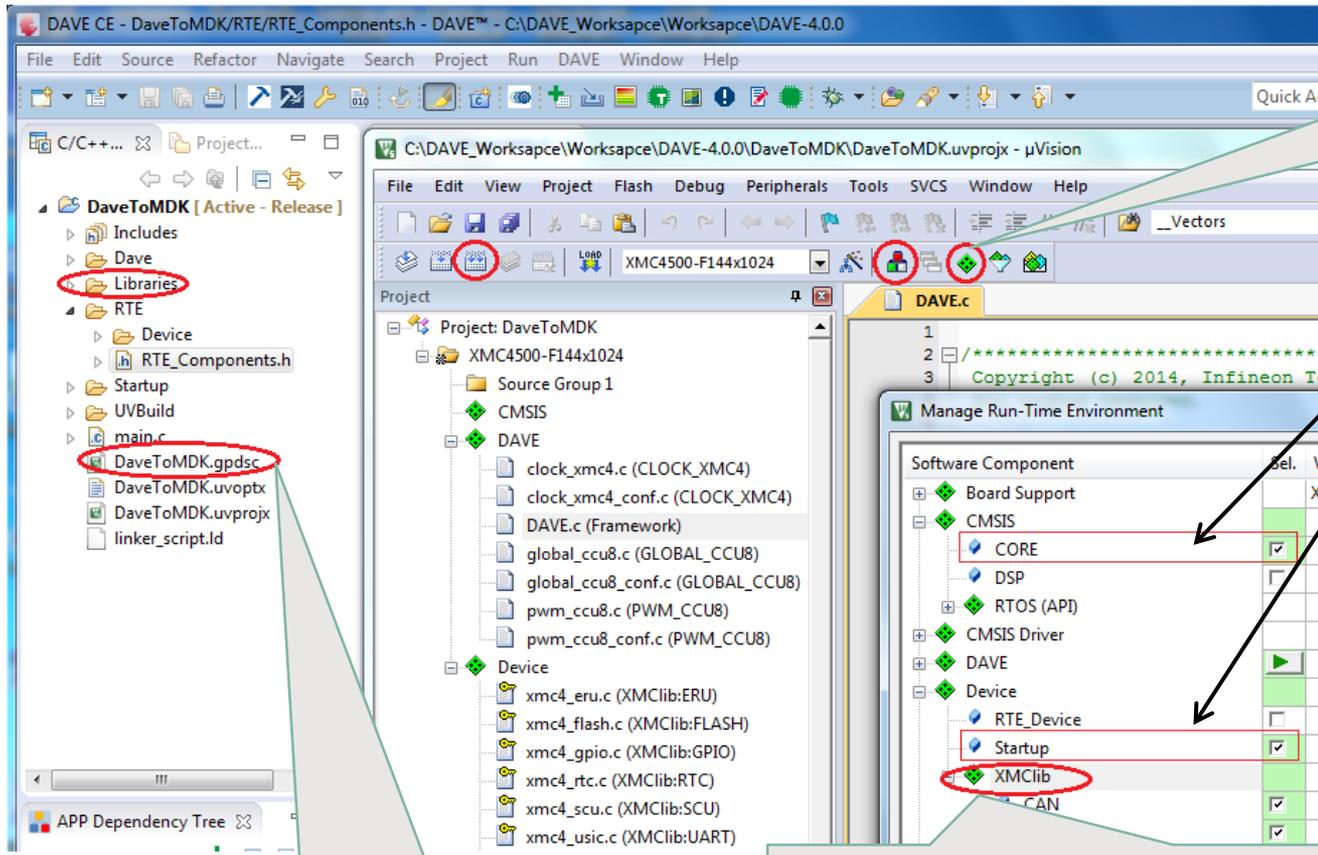
After code regeneration

**Step 4.1:
Generate Code**



**DaveToMDK.gpd
sc is generated**

Step 5: Open MDK project (1/2)



Step 5.2: Check if **CMSIS**, **Startup** files and **XMCLib** are selected

Step 5.1: Double click **.gpdsc** file to open the Keil uVision

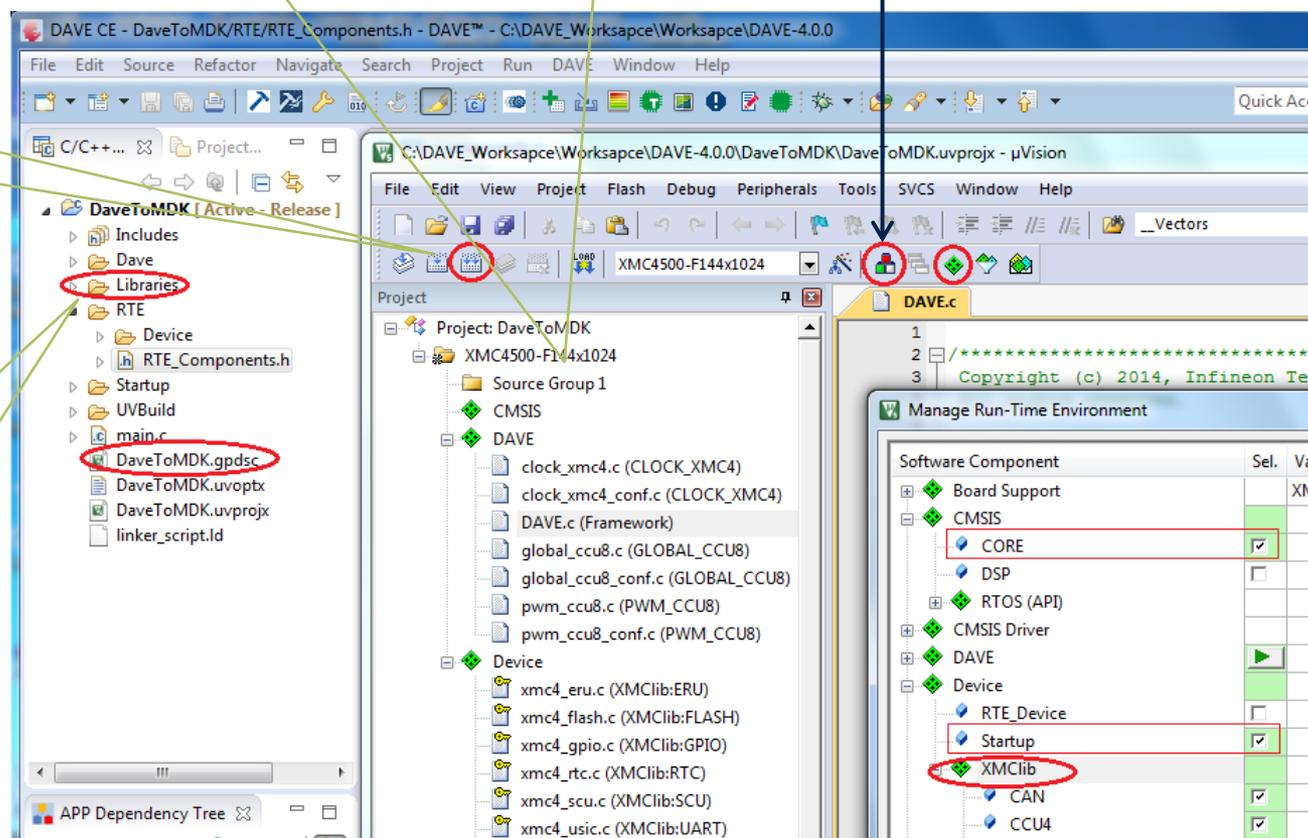
Note: From DAVE™ version 4 and MDK PACK v2.2.0 (XMC4), v2.0.0 (XMC1) the XMCLib is an *integral part* in project

Step 5: Open MDK project (2/2)

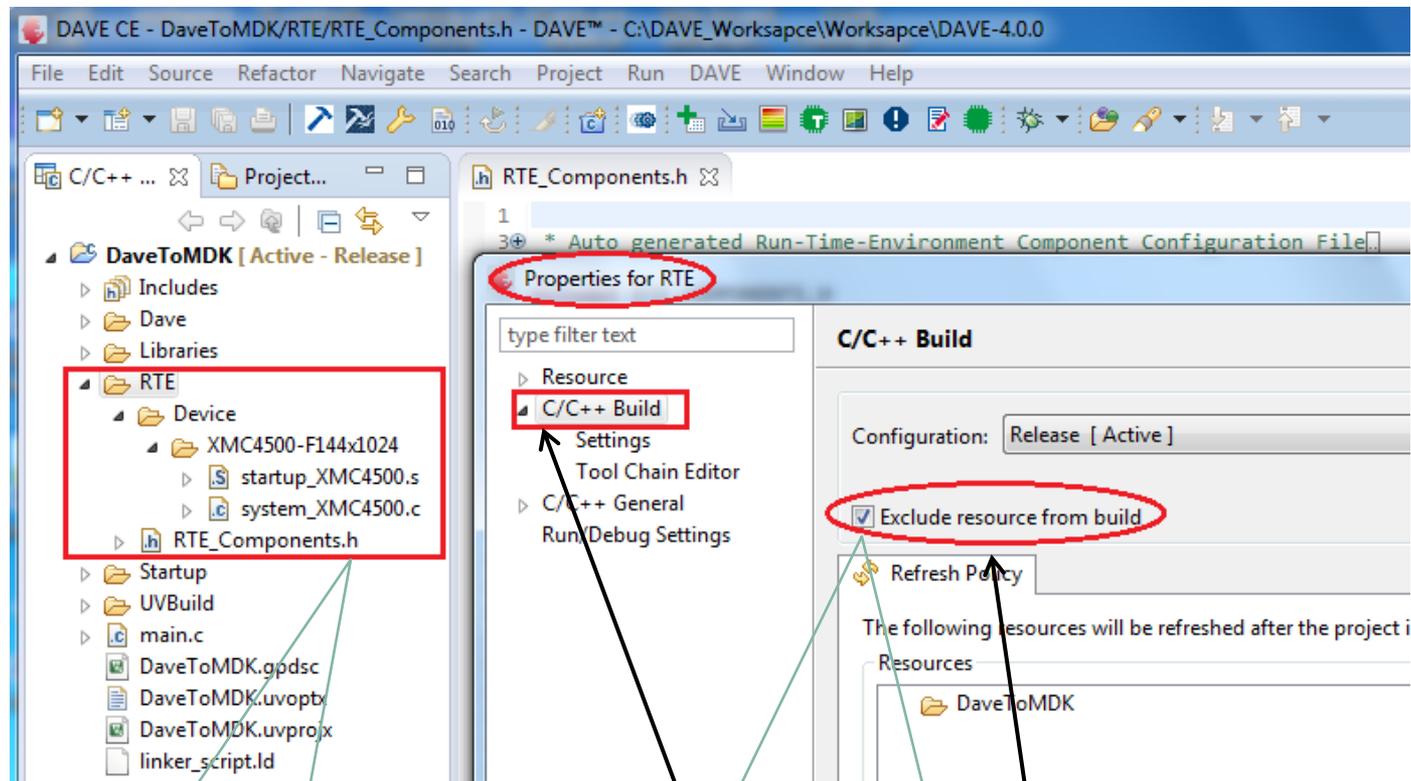
Step 5.3: Add the application codes in **Source Group** of project
Important: *gpdsc* file just imports the DAVE™ generated codes into Keil MDK Project. The application codes must be manually added.

Step 5.5: Build project

Step 5.4: Add the library contained in DAVE™ project into MDK project, if it is necessary



Exclude RTE folder from DAVE™ build



The folder **RTE** is created by Keil project, and **must be** excluded from DAVE™ version 4 project

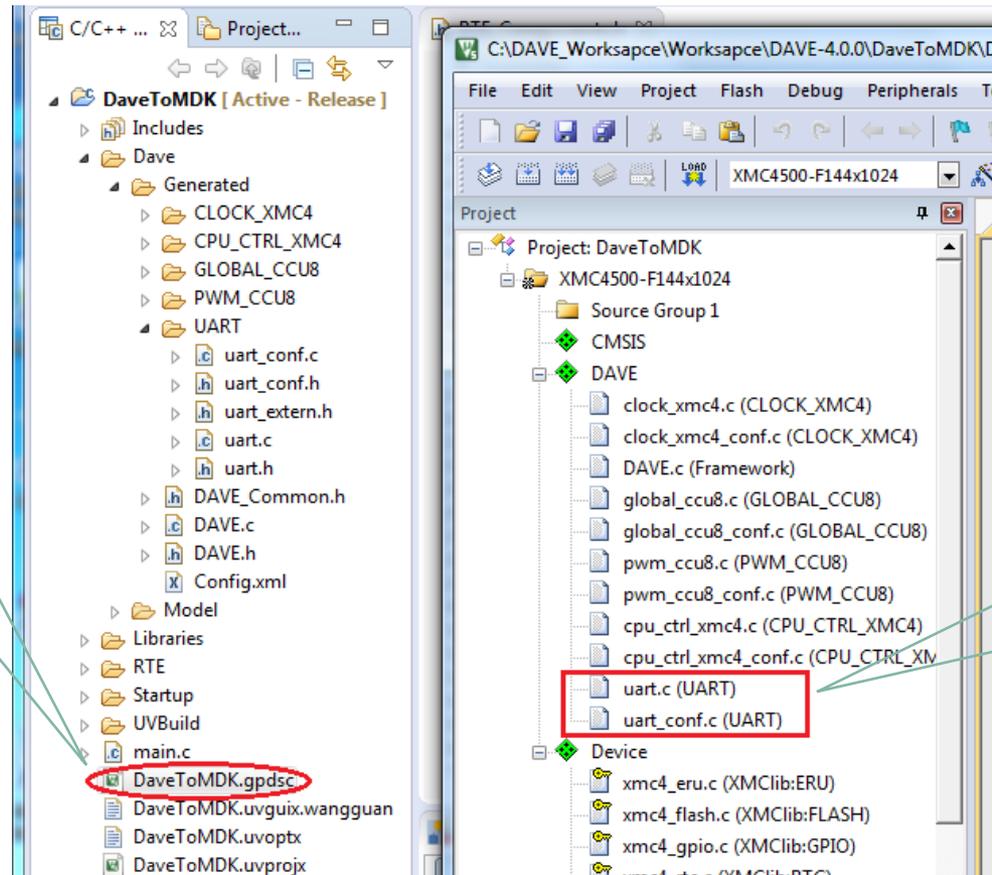
Step 1:

- > Open **Properties for RTE**
- > Go to **C/C++ Build**
- > Select **Exclude resource from build**

If additional new DAVE™ apps will be added to the DAVE™ project

This step is only needed, if the new DAVE™ apps are added and the sources are regenerated in the DAVE™ project. In this case the new sources must be updated in the MDK project.

Step 1:
Double click the
.gpdsc file



The new
source files
are added in
Keil MDK
project

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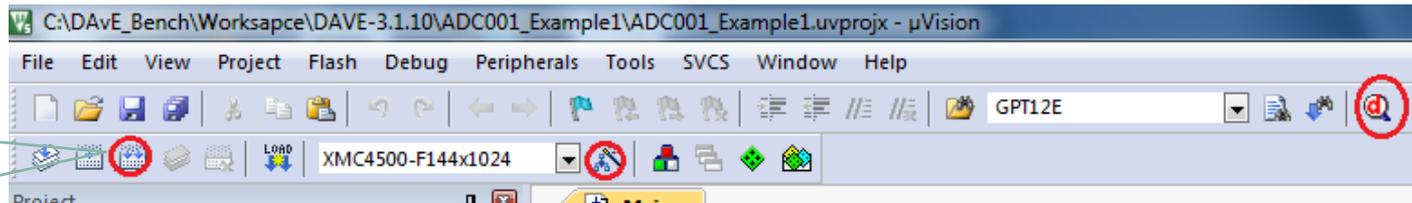
4

Build and download MDK project to a XMC4000/1000 evaluation board

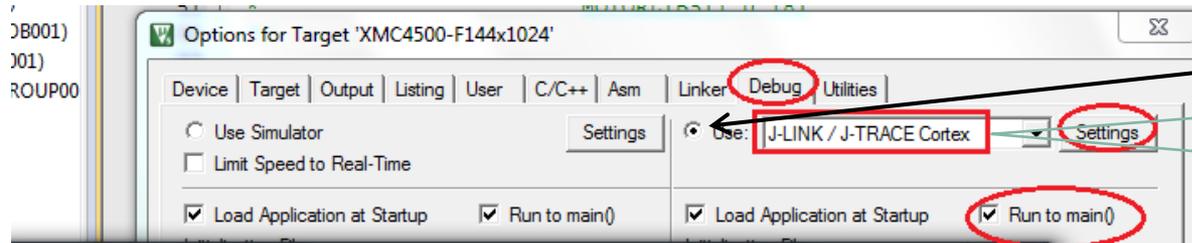
Build and download MDK project to a XMC4000/1000 evaluation board (1/2)

To make the MDK project work Segger JLINK v4.80f or higher should be installed. Furthermore, some steps need to be done manually as follows.

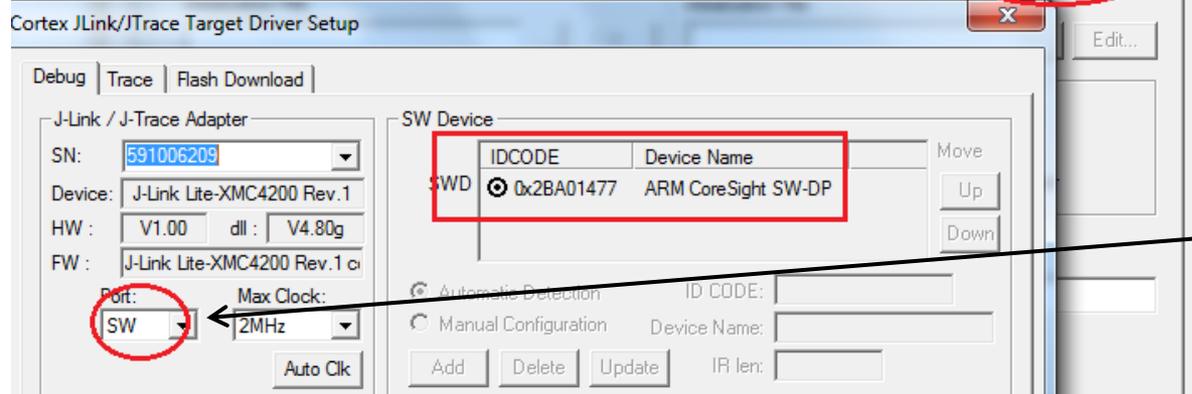
Step 1:
Build project



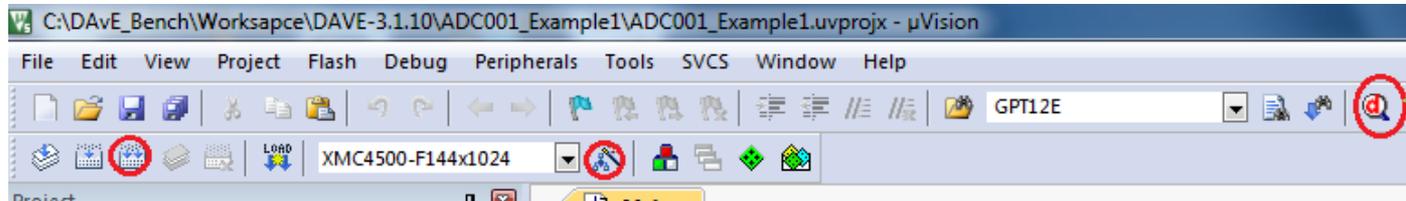
Step 2: Select JLINK debugger



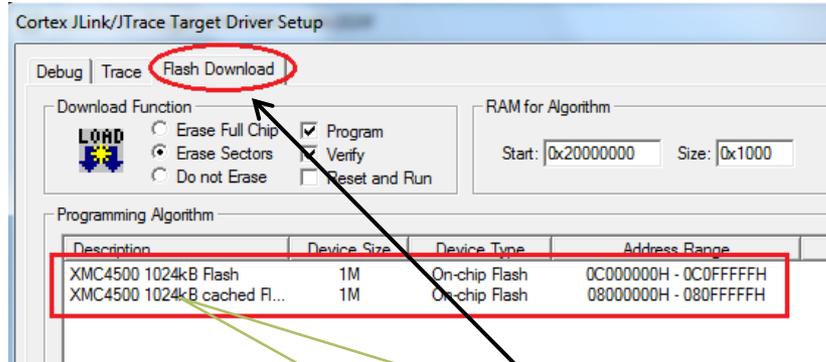
Step 3: JLINK settings - SW



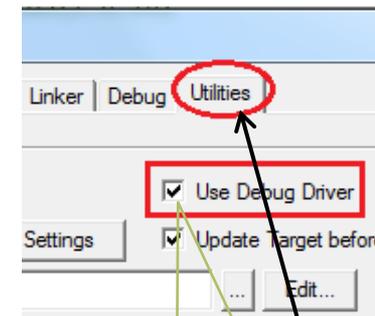
Build and download MDK project to a XMC4000/1000 evaluation board (2/2)



Step 6:
Start
debugger

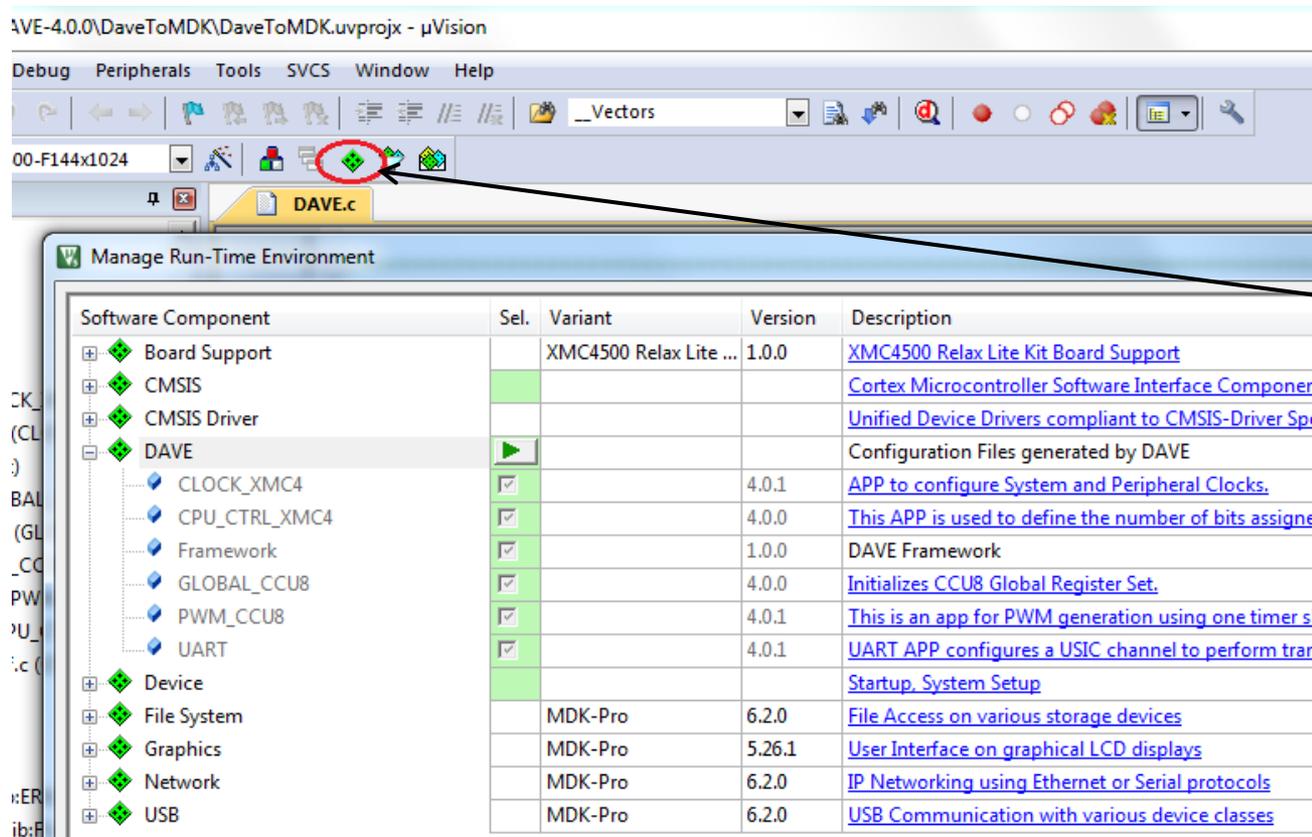


Step 4: JLINK settings – Add
Flash programming



Step 5: Select
Use Debug
Driver

Further information



Here you can find the documents about DAVE™ version 4 Apps

- › There is also an App-Note from Keil that describes the importing of the DAVE™ generated source files into MDK v5.10: http://www.keil.com/appnotes/docs/apnt_258.asp

Support material

Collaterals and Brochures



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- › Selection Guides
- › Application Brochures
- › Presentations
- › Press Releases, Ads

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- › Technical Articles
- › Simulation Models
- › Datasheets, MCDS Files
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Glossary abbreviations

- › CMSIS[®] Cortex Microcontroller Software Interface Standard
- › DAVE[™] Free development IDE for XMC[™]
- › GPDSC Generator Package Description
- › MDK Microcontroller Development Kit
- › PDSC Package Description

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