Tutorial to Import DAVE[™] version 3 Generated Library Sources to ARM® MDK Using CMSIS® PACK

Version 3, July, 2015



Purpose: Import the DAVE[™] v3 generated source files to ARM MDK, no full project migration



DAVE™ project outline



All other project files are not referenced in the gpdsc file.

- DAVETM is a free eclipse based development platform that can generate application libraries from DAVETM Apps.
- The generated code is included in a DAVE[™] project.
- DAVE[™] v3.1.10 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[™] project is ported; to port the full DAVE[™] project the existing user code has to be manually referenced

Concept





Respective project view in MDK



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

- In addition to the references of generated DAVE[™] code the gpdsc file (an xml file) contains conditions for the selected target MCU and preprocessor commands in RTE_Components.h file
- Double click on the gpdsc file will automatically create a ARM MDK project for the target MCU defined in the gpdsc 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 DAVETM (eclipse) project; Build in DAVETM will now create build error, this can be avoided excluding these files from build in the DAVETM project



Prerequisites to Follow the Tutorial

µVision v5.10 ARM MDK

Download a free version Infineon Device PACK v1.5.0



- DAVE[™] v3.1.10, a PACK file with file extension *gpdsc* is created by code generation, which is dedicated for porting the DAVE[™] project to ARM MDK <u>Download DAVE</u>
- The following pages provide a step wise description how to import the library sources configured and generated in DAVE[™] to ARM MDK

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Important: just device PACK v1.5.0 or lower supports DAVE[™] version 3 generated codes. From v1.5.0 the CMSIS files in MDK PACK are changed and incompatible with previous version.

To install PACK **v1.5.0** please firstly download the PACK here:

XMC1000:

http://media.infineon.com/mdk/Infineon.XMC1000 DFP.1.5.0.pack

XMC4000: http://media.infineon.com/mdk/Infineon.XMC4000_DFP.1.5.0.pack

Install Infineon Device PACK v1.5.0 (2/2)





Import an Existing DAVE[™] Project or Create a New DAVE[™] Project with **DAVE 3.1.10**



🐇 Import			
Select Create new projects from an archive file or directory.	r ² 1	In case of existed project:	
Select an import source:		Step 1 : import the existed project	
General General General General Existing Projects into Workspace File System General Preferences C/C++			

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	DAVE Project	
	Create a new C/C++ project for Infineon tool chains	
	Project Name: Easy_Start	
In case of new project:	☑ Use default location	
	Location: C:/DAvE_Bench/Worksapce/DAVE-3.1.10	Browse
Stop 2: define a new DAVE CE	Project Type:	Tool Chain:
	🗁 Infineon XMC	ARM-GCC Application for XMC
project	ARM-GCC Application for XMC Project	
	Empty Main Project	
	DAVE CE Project	
	Empty Project	
	Empty Project	

Enable "Generate gpdsc file" in DAVE™





In Cases an Existing DAVE[™] Example Project is Used





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In Case of New DAVE[™] Project



Note: Before continue with step 4.1 select and configure the required DAVE Apps



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Open MDK Project and Select PACK v1.5.0 (1/3)





Open MDK Project and Select PACK v1.5.0 (2/3)



	Update Configuration Files of Softwa	are Components		×	
	To use the new version of the software component the following configuration files require an update:				
Step 1: update	File name	Current Version	New Version	Component	
the CMSIS files	C:\DAVE_Worksapce\Worksapc				
to DACK v1 5 0	system_XMC1300.c	1.2	1.5.0	Infineon::Device.Startup	
LU PACK VI.J.U	startup_XMC1300.s	1.3	1.5.0	Infineon::Device.Startup	
	Update Replace the co appending a se The new config previous version Cancel Help To use the curropen "Option for	configuration files with new versions. The current configuration files are renamed by sequential number. figuration files have default settings. Merge manually the configuration settings from the ion. rrent version of the configuration file: for Component" and select original version of the software component		he current configuration files are renamed by lerge manually the configuration settings from the rsion of the software component	

Open MDK Project and Select PACK v1.5.0 (3/3)



Step 1: check if **Step 2:** add the application codes in "Source Group" of project CMSIS and Startup **Important:** *qpdsc* file just imports the DAVE generated codes into files are included Keil MDK Project. The application codes must be manually added. DAVE CE - DAVE 3 File Edit Source Refactor Navigate Search Ron Project DAVE Debug Window Help | 幹 🕸 IFX GDB Deb... 🏇 T 📑 🗕 🖫 🔄 💼 👼 🗟 ि - C 🚔 🎯 券 è : 🏠 🦓 📢 🔣 🔲 🛣 🚳 COM Port CON 52 👻 Baud Rate 1000000 🗸 🗄 🖢 👻 🖓 ▼ ⇒ ▼ - -🚾 C/C++ Projects 🛛 🔪 🏠 Project Explorer Step 3: Add ⇔ ⇔ ۿ 🗖 🔁 🌫 🗸 the library 😤 Blinky C:\DAVE_Wcrksapce\Worksapce\DAVE-3.1.10\Test_XMC1300_CE\Test_XMC1300_CE.uvprojx - µVision 😤 Test_XMC1300_CE [Active - Del contained in File Edit View Project Flash Debug Peripherals Tools SVCS Window Help Includes DAVE project 🕞 Dave 이 💕 🚽 🕼 👗 🐴 🔼 🧐 🕑 💷 //= //👷 💆 uc_id P 12 . 12 19 🕞 Cache into MDK I CAR - CAR 🔍 🔜 🛛 🐙 🛛 XMC1302-Q040x0128 🖬 🛠 🚯 🗄 🍪 🐡 💩 ⇒ Generated 🕞 inc д 🔝 Project project, if it is ീ system XMC1300.c 🕞 src E * Project: Tes: XN C1300_CE BAVESupport necessary. 🖮 🚂 X MC130 - Q040x0128 2 **@file** system XMC1; 00.c 👝 LIBS 3 fic initializ Source Group 1 ▷ MATHLIBS Manage Run-Time Environme 4 CMSIS PRNG01 5 DAVE3 🕞 Model 6 Software Component Sel. V 7 🚖 Lib 🔿 Device 🖃 🚸 CMSIS 8 👝 Startup startup_XMC1300.s (Startup) CORE 9 C Main.c system_XMC1300.c (Startup) 10 DSP П startup_xmc1300.lst 11 🗄 🚸 RTOS (API) Test XMC1300 CE.gpdsc 12 Test XMC1300 CE.ld 🚸 DAVE3 13 Test_XMC1300_CE.map Framework 14 Step 4: build E Text_XMC4500_CE 15 PRNG01 16 🚸 Device project 17 Startup $\overline{}$ 18 more..

If it is required to keep the project buildable in DAVE[™]: Exclude RTE folder from DAVE[™] build





IF additional new DAVE[™] Apps will be added to the DAVE[™] project



This step is just 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.



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.



Build and download MDK project to a XMC4000/1000 Evaluation Board (2/2)





Further Information



ce\DAVE-3.1.10\ADC001_Example1\ADC0	001_Example1.uvprojx - µVis	ion		
Flash Debug Peripherals Tools	SVCS Window Help			
a 🚨 '9 (e →) (e 12, 12)	御津津	🖄 GPT12E	모 🗟 🌾 🍳 🔺 ୦ 🔗 🁧 🖬 🔍	
🕅 XMC4500-F144x1024 💽 💉 🔒				(
A Main.	<u> </u>			Here you can find the
Software Component	Sel. Variant	Version	Description	documents
E 💠 CMSIS			Cortex Microcontroller Software Interface Components	
DAVE3			Configuration Files generated by DAVE3	Apps
ADC001		1.0.20	This is top level ADC Background App. This provides configurations for	
ADCGLOB001		1.0.26	This App consume CLK001 and RESET001 Apps for XMC4x00 devicesan	
ADCGROUP001		1.0.26	This is ADC group app. It provides ADC group specific, EMUX specific, a	- [
CLK001		1.0.42	App to configure System and Peripheral Clocks.	-
Framework		1.0.42	DAVE3 Framework	-
10001		1.0.16	IO001 App used by a higher level app to configure an analog pin.	-
NVIC002		1.0.26	App which allows user to configure an interrupt node.NVIC002 App ma	-
1 RESET001		1.0.14	App which provides APIs to assert/deassert peripheral modules.	-
🕕 😥 🗇 Device			Startup, System Setup	

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



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