



SAM L CPU Support Package Guide

Version: 1.1



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SAM L Support Package

This guide describes the following features of the SAM L CPU support package:

- [How to create SAM L projects](#)
- [How to open SAM L sample projects](#)
- [SAM L specific project properties](#)
- [SAM L specific project templates](#)
- [Supported SAM L devices](#)

Creating SAM L Projects

Creating an SAM L C/C++ executable project

To create a new minimal C/C++ executable project:

- Select the **File > New > New Project** menu item.
- Select the **A C/C++ executable for Atmel SAM L** project template.
- Set the required project name and location directory.
- Click **Next**.
- If required, change any of the default project settings.
- Click **Finish** to create the project.

Creating an SAM L library project

To create a new library project:

- Select the **File > New > New Project** menu item.
- Select the **A library for Atmel SAM L** project template.
- Set the required project name and location directory.
- Click **Next**.
- If required, change any of the default project settings.
- Click **Finish** to create the project.

Creating an SAM L externally built executable project

To create a new project that will allow you to debug an existing externally built executable file:

- Select the **File > New > New Project** menu item.
- Select the **An externally built executable for Atmel SAM L** project template.
- Set the required project name and location directory.
- Click **Next**.
- Set the **Load File** project property to point to the executable file you want to download and debug.
- If required, change any of the other default project settings.
- Click **Finish** to create the project.

Creating an SAM L CrossWorks Tasking Library executable project

To create a new C/C++ executable project configured to use the CrossWorks Tasking Library:

- Select the **File > New > New Project** menu item.
- Select the **A CrossWorks Tasking Library executable for Atmel SAM L** project template.
- Set the required project name and location directory.
- Click **Next**.

- If required, change any of the other default project settings.
- Click **Finish** to create the project.

Creating an SAM L assembly code only executable project

Please note, this template does not add any C/C++ startup code or libraries and is therefore not suitable for creating projects that include C/C++ code.

To create a new assembly code only executable project without:

- Select the **File > New > New Project** menu item.
- Select the **An assembly code only executable for Atmel SAM L** project template.
- Set the required project name and location directory.
- Click **Next**.
- If required, change any of the other default project settings.
- Click **Finish** to create the project.

Opening SAM L Sample Solutions

SAM L Samples Solution

This solution contains general sample projects that run on SAM L devices. To open the SAM L Samples Solution:

- Select the **Tools > Show Installed Packages** menu item.
- Select the **Atmel SAM L CPU Support Package** link.
- Select the **Samples Solutions > SAM L Samples Solution** link.

SAM L CMSIS-DSP Samples Solution

This solution contains sample projects that use the CMSIS-DSP library running on SAM L devices. To open the SAM L CMSIS-DSP Samples Solution:

- Select the **Tools > Show Installed Packages** menu item.
- Select the **Atmel SAM L CPU Support Package** link.
- Select the **Sample Solutions > SAM L CMSIS-DSP Samples Solution** link.

SAM L Project Properties

Projects creating using the project templates in this support package have the following device specific project properties:

Heap Size

The heap size is set to be 256 bytes when a project is created. The heap size can be modified using the **Heap Size** project property.

Section Placement

You can select the memory configuration you require using the **Section Placement** project property.

For SAM L projects, the set of placements are:

- **Flash** - The application runs in internal Flash memory (*default*).
- **Flash Vectors In RAM** - The application runs in internal Flash memory and exception vectors are copied to RAM memory.
- **Flash Copy To RAM** - The application starts in internal flash and copies itself to run from internal RAM memory.
- **RAM** - The application runs from internal RAM memory only.

Stack Sizes

The main stack size is set to be 256 bytes when a project is created.

The process stack size is set to be 0 bytes when a project is created.

The main and process stack sizes can be modified using the **Main Stack Size** and **Process Stack Size** project properties.

To change the location of the stacks, edit the section placement file and place the `.stack` and `.stack_process` sections as required.

Startup From Reset

By default, the application will only startup from power-on/reset in *Release* configuration. This acts as a safety net in case you accidentally download a program in FLASH during development that crashes and prevents the debugger from taking control of the target over the debug interface thus rendering the device unusable.

For SAM L projects, the **Startup From Reset** project property can be set to one of the following:

- **No** - The application will not startup from reset.

- **Release Only** - The application will only startup from reset when built in *Release* configuration (*default*).
- **Yes** - The application will always startup from reset.

Target Processor

Once a project has been created you can target different devices by modifying the **Target Processor** project property. See the [SAM L Devices](#) section for details on the files, preprocessor definitions and macro definitions used when a device is selected.

SAM L Project Templates

The project template system simplifies the creation of new projects with the IDE, it also system makes it easy to create new projects with a text editor or script. All that needs to be specified is the project name, the support packages that the project is dependent on, the target processor and the source files you want to add to the project. For example, create a file called *example.hzp* with the following contents:

```
<!DOCTYPE CrossStudio_Project_File>
<solution Name="Example Solution">
  <project Name="Example Project" template_name="SAM_L_EXE">
    <configuration Name="Common" package_dependencies="SAM_L" Target="ATSAML21E18B" />
    <folder Name="Source Files">
      <file file_name="file1.c" />
      <file file_name="file2.c" />
    </folder>
  </project>
</solution>
```

You can also add any other property settings that the project requires such as preprocessor definitions or include paths using the property save name, for example:

```
<!DOCTYPE CrossStudio_Project_File>
<solution Name="Example Solution">
  <project Name="Example Project" template_name="SAM_L_EXE">
    <configuration Name="Common" package_dependencies="SAM_L" Target="ATSAML21E18B"
      c_preprocessor_definitions="MYDEF1=1;MYDEF2=TWO" c_user_include_directories="$(ProjectDir)/
      include1;$(ProjectDir)/include2" />
    <folder Name="Source Files">
      <file file_name="file1.c" />
      <file file_name="file2.c" />
    </folder>
  </project>
</solution>
```

Available SAM L project templates

Template Name	Template Description
SAM_L_ASM_EXE	SAM L Assembly Code Only Executable
SAM_L_CTL_EXE	SAM L CTL Executable
SAM_L_EXE	SAM L C/C++ Executable
SAM_L_EXT_EXE	SAM L Externally Built Executable
SAM_L_LIB	SAM L Library

SAM L Devices

This package supports the following SAM L devices:

- [SAM L21 Family](#)
- [SAM L22 Family](#)

SAM L21 Family

- [ATSAML21E15A](#)
- [ATSAML21E15B](#)
- [ATSAML21E16A](#)
- [ATSAML21E16B](#)
- [ATSAML21E17A](#)
- [ATSAML21E17B](#)
- [ATSAML21E18B](#)
- [ATSAML21G16A](#)
- [ATSAML21G16B](#)
- [ATSAML21G17A](#)
- [ATSAML21G17B](#)
- [ATSAML21G18A](#)
- [ATSAML21G18B](#)
- [ATSAML21J16A](#)
- [ATSAML21J16B](#)
- [ATSAML21J17A](#)
- [ATSAML21J17B](#)
- [ATSAML21J18A](#)
- [ATSAML21J18B](#)

ATSAML21E15A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21E15A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21E15A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21E15A_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21E15A__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x00007FFF
RAM	0x20000000 - 0x20000FFF
RAM2	0x30000000 - 0x300007FF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21E15A_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21E15A_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21E15B

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21E15B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21E15B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21E15B_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21E15B__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x00007FFF
RAM	0x20000000 - 0x20000FFF
RAM2	0x30000000 - 0x300007FF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21E15B_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21E15B_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21E16A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21E16A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21E16A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21E16A_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21E16A__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF
RAM2	0x30000000 - 0x30000FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21E16A_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21E16A_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21E16B

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21E16B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21E16B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21E16B_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21E16B__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF
RAM2	0x30000000 - 0x30000FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21E16B_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21E16B_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21E17A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21E17A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21E17A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21E17A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML21E17A__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML21E17A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML21E17A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21
```

ATSAML21E17B

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21E17B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21E17B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21E17B_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21E17B__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21E17B_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21E17B_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21E18B

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21E18B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21E18B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21E18B_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21E18B__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21E18B_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21E18B_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21G16A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21G16A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21G16A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21G16A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML21G16A__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF
RAM2	0x30000000 - 0x30000FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML21G16A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML21G16A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21
```

ATSAML21G16B

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21G16B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21G16B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21G16B_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21G16B__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF
RAM2	0x30000000 - 0x30000FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21G16B_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21G16B_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21G17A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21G17A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21G17A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21G17A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML21G17A__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML21G17A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML21G17A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21
```

ATSAML21G17B

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21G17B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21G17B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21G17B_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML21G17B__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML21G17B_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML21G17B_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21
```


ATSAML21G18A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21G18A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21G18A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21G18A_Vectors.s

Preprocessor Definitions

ARM_MATH_CM0PLUS
 __SAML21G18A__
 __SAM_L21_SUBFAMILY
 __SAM_L_FAMILY

Memory Segments

FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros

DeviceIncludePath=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
 DeviceHeaderFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
 DeviceLoaderFile=\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
 DeviceRegisterDefinitionFile=\$(TargetsDir)/SAM_L/XML/ATSAML21G18A_Registers.xml
 DeviceSystemFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
 DeviceVectorsFile=\$(TargetsDir)/SAM_L/Source/ATSAML21G18A_Vectors.s
 DeviceFamily=SAM L
 DeviceSubFamily=SAM L21

ATSAML21G18B

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21G18B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21G18B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21G18B_Vectors.s

Preprocessor Definitions
ARM_MATH_CM0PLUS
__SAML21G18B__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY

Memory Segments	
FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros
DeviceIncludePath=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=\$(TargetsDir)/SAM_L/XML/ATSAML21G18B_Registers.xml
DeviceSystemFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=\$(TargetsDir)/SAM_L/Source/ATSAML21G18B_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21

ATSAML21J16A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21J16A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21J16A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21J16A_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21J16A__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF
RAM2	0x30000000 - 0x30000FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21J16A_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21J16A_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21J16B

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21J16B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21J16B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21J16B_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML21J16B__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF
RAM2	0x30000000 - 0x30000FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML21J16B_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML21J16B_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21
```

ATSAML21J17A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21J17A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21J17A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21J17A_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML21J17A__	
__SAM_L21_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML21J17A_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML21J17A_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L21

ATSAML21J17B

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21J17B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21J17B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21J17B_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML21J17B__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML21J17B_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML21J17B_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21
```

ATSAML21J18A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21J18A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21J18A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21J18A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML21J18A__
__SAM_L21_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML21J18A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML21J18A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L21
```

ATSAML21J18B

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c
Family	SAM L
Sub Family	SAM L21
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML21J18B_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML21J18B_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML21J18B_Vectors.s

Preprocessor Definitions

ARM_MATH_CM0PLUS

__SAML21J18B__

__SAM_L21_SUBFAMILY

__SAM_L_FAMILY

Memory Segments

FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF
RAM2	0x30000000 - 0x30001FFF

Project Macros

DeviceIncludePath=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include

DeviceHeaderFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Include/saml21.h

DeviceLoaderFile=\$(TargetsDir)/SAM_L/Loader/SAM_L21_Loader.elf

DeviceRegisterDefinitionFile=\$(TargetsDir)/SAM_L/XML/ATSAML21J18B_Registers.xml

DeviceSystemFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML21/Source/system_saml21.c

DeviceVectorsFile=\$(TargetsDir)/SAM_L/Source/ATSAML21J18B_Vectors.s

DeviceFamily=SAM L

DeviceSubFamily=SAM L21

SAM L22 Family

- [ATSAML22G16A](#)
- [ATSAML22G17A](#)
- [ATSAML22G18A](#)
- [ATSAML22J16A](#)
- [ATSAML22J17A](#)
- [ATSAML22J18A](#)
- [ATSAML22N16A](#)
- [ATSAML22N17A](#)
- [ATSAML22N18A](#)

ATSAML22G16A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22G16A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22G16A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22G16A_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML22G16A__	
__SAM_L22_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML22G16A_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML22G16A_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L22

ATSAML22G17A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22G17A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22G17A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22G17A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML22G17A__
__SAM_L22_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML22G17A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML22G17A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L22
```

ATSAML22G18A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22G18A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22G18A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22G18A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML22G18A__
__SAM_L22_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML22G18A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML22G18A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L22
```

ATSAML22J16A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22J16A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22J16A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22J16A_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML22J16A__	
__SAM_L22_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML22J16A_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML22J16A_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L22

ATSAML22J17A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22J17A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22J17A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22J17A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML22J17A__
__SAM_L22_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML22J17A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML22J17A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L22
```

ATSAML22J18A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22J18A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22J18A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22J18A_Vectors.s

Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML22J18A__	
__SAM_L22_SUBFAMILY	
__SAM_L_FAMILY	

Memory Segments	
FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF

Project Macros	
DeviceIncludePath	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
DeviceHeaderFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
DeviceLoaderFile	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
DeviceRegisterDefinitionFile	\$(TargetsDir)/SAM_L/XML/ATSAML22J18A_Registers.xml
DeviceSystemFile	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
DeviceVectorsFile	\$(TargetsDir)/SAM_L/Source/ATSAML22J18A_Vectors.s
DeviceFamily	SAM L
DeviceSubFamily	SAM L22

ATSAML22N16A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22N16A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22N16A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22N16A_Vectors.s

Preprocessor Definitions

```
ARM_MATH_CM0PLUS
__SAML22N16A__
__SAM_L22_SUBFAMILY
__SAM_L_FAMILY
```

Memory Segments

FLASH	0x00000000 - 0x0000FFFF
RAM	0x20000000 - 0x20001FFF

Project Macros

```
DeviceIncludePath=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
DeviceHeaderFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
DeviceLoaderFile=$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
DeviceRegisterDefinitionFile=$(TargetsDir)/SAM_L/XML/ATSAML22N16A_Registers.xml
DeviceSystemFile=$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
DeviceVectorsFile=$(TargetsDir)/SAM_L/Source/ATSAML22N16A_Vectors.s
DeviceFamily=SAM L
DeviceSubFamily=SAM L22
```


ATSAML22N17A

Device Details

CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22N17A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22N17A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22N17A_Vectors.s

Preprocessor Definitions

ARM_MATH_CM0PLUS

__SAML22N17A__

__SAM_L22_SUBFAMILY

__SAM_L_FAMILY

Memory Segments

FLASH	0x00000000 - 0x0001FFFF
RAM	0x20000000 - 0x20003FFF

Project Macros

DeviceIncludePath=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include

DeviceHeaderFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h

DeviceLoaderFile=\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf

DeviceRegisterDefinitionFile=\$(TargetsDir)/SAM_L/XML/ATSAML22N17A_Registers.xml

DeviceSystemFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c

DeviceVectorsFile=\$(TargetsDir)/SAM_L/Source/ATSAML22N17A_Vectors.s

DeviceFamily=SAM L

DeviceSubFamily=SAM L22

ATSAML22N18A

Device Details	
CMSIS Header File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h
CMSIS Include Path	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include
CMSIS System File	\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c
Family	SAM L
Sub Family	SAM L22
Loader File	\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf
Memory Map File	\$(TargetsDir)/SAM_L/XML/ATSAML22N18A_MemoryMap.xml
Register Definition File	\$(TargetsDir)/SAM_L/XML/ATSAML22N18A_Registers.xml
Vectors File	\$(TargetsDir)/SAM_L/Source/ATSAML22N18A_Vectors.s
Preprocessor Definitions	
ARM_MATH_CM0PLUS	
__SAML22N18A__	
__SAM_L22_SUBFAMILY	
__SAM_L_FAMILY	
Memory Segments	
FLASH	0x00000000 - 0x0003FFFF
RAM	0x20000000 - 0x20007FFF
Project Macros	
DeviceIncludePath=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include	
DeviceHeaderFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Include/saml22.h	
DeviceLoaderFile=\$(TargetsDir)/SAM_L/Loader/SAM_L22_Loader.elf	
DeviceRegisterDefinitionFile=\$(TargetsDir)/SAM_L/XML/ATSAML22N18A_Registers.xml	
DeviceSystemFile=\$(TargetsDir)/SAM_L/CMSIS/Device/SAML22/Source/system_saml22.c	
DeviceVectorsFile=\$(TargetsDir)/SAM_L/Source/ATSAML22N18A_Vectors.s	
DeviceFamily=SAM L	
DeviceSubFamily=SAM L22	