Microsemi SmartDesign MSS Firmware Configurator Owner's Manual

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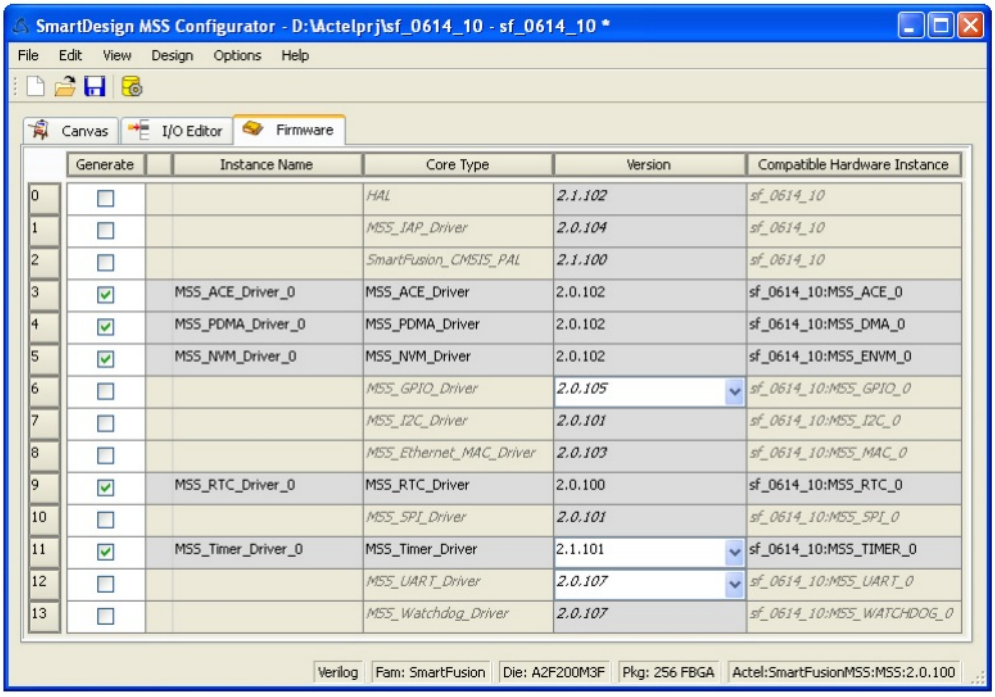
Firmware

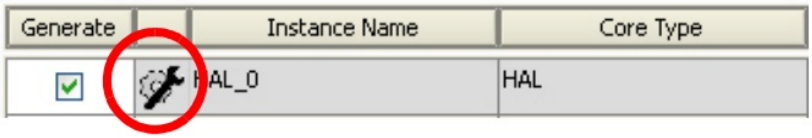
The SmartDesign MSS Configurator is a specialized SmartDesign for MSS configuration. If you are familiar with SmartDesign then the MSS Configurator will be very familiar. The MSS Configurator finds all the compatible firmware for the hardware that you have in your design. These firmware cores are shown in the Firmware tab of the MSS Configurator (as shown in Figure 1).



Firmware Table
The Firmware table lists the compatible firmware based on the hardware peripherals that you have used in your design. Each row represents a compatible firmware core. The columns are:

- Generate – Allows you to choose whether you want the files for this firmware core to be generated on disk. You may decide to use your own firmware rather than Actel's provided firmware cores.
- Instance Name – This is the name of the firmware instance. This maybe helpful in distinguishing firmware cores when you have multiple firmware of the same Vendor:Library:Name:Version (VLNV) in your design.
- Core Type – Firmware Core Type is the Name from the VLNV id of the core.
- Version – Firmware Core Version
- Compatible Hardware Instance – The hardware instance that is compatible with this firmware core.

Configuring Firmware
Firmware that have configurable options will have a wrench icon in the row (as shown in Figure 2). Click the wrench icon or double-click the row to configure the firmware.



Note: It is important that you check the configuration of your firmware if they have configurable options. They may have options that target your toolchain (SoftConsole, Keil, IAR), or your processor that are vital configuration options to getting your system to work properly.

Downloading Firmware
The MSS Configurator attempts to find compatible firmware located in the IP Vault located on your disk, as well as firmware in the IP Repository through the Internet. If compatible firmware is found in the IP repository, the row will be italicized indicating that it needs to be downloaded. To download the firmware core, right-click and choose Download Core.

Changing Versions

There will often be multiple versions of a firmware available for a particular firmware core. For a new design, the MSS Configurator will pick the latest compatible version. However, once the firmware has been added to your design, the tool will not automatically change to the latest version if one becomes available. You can manually change to the latest version by selecting the drop down in the Version column. If the latest version is italicized, you will need to download the firmware after selecting it.

Generating Sample Projects
Firmware cores are packaged with sample projects that demonstrate their usage. They are packaged for specific tool chains, such as SoftConsole, Keil, and IAR. To generate a sample project, right-click a firmware instance that has been added to your design, and choose Generate Sample Project followed by the tool chain you are targeting. You will be prompted to select the destination folder for the sample project. Once this project is generated you can use it as a starting point in your Software IDE tool or use the example project as a basis on how to use the firmware driver.

Peripherals in the Fabric
The MSS Configurator will also attempt to find compatible firmware for soft peripherals that you have added in your top-level SmartDesign. To enable this, you must set the top level SmartDesign as root in Libero® IDE. Right click your top level design in the Libero IDE Design Hierarchy and choose Set as Root. The root component will have its name bolded if it is root. Then reopen the MSS Configurator and it will search through the entire design and instantiate firmware that are compatible with your soft peripherals. You can use the Compatible Hardware Instance column to see if any firmware was found for your soft peripherals.

Frequently Asked Questions

Where are the firmware files generated to?
The firmware files are generated to the firmware working directory.

- When the MSS Configurator is invoked from Libero IDE, this is \firmware. Typically, you will import this entire folder into your Software IDE to continue the software portion of your SmartFusion design.
- When the MSS Configurator is invoked from your Software IDE, the firmware directory is the location that you specified when you setup the MSS Configurator to run as an external tool in your IDE. Refer to the Running the MSS Configurator in Your Software Tool Chain document on the Actel website.

Why are some firmware in italics?
This indicates the firmware is in the IP repository but not in your local IP vault. You must download it to your local IP vault so that the MSS Configurator will generate the firmware files.

Why am I getting this error on generation: “Error: ‘Missing Core Definition’: Core ‘Actel:Firmware:MSS_SPI_Driver:2.0.101 ‘ is missing from the vault.”?
This happens when a firmware that is in your design but the VLNV definition could not be found in your IP vault. This can happen if you:

- Changed your vault settings to point to another vault
- Opened a project that was created on another machine

Why is my firmware view empty?
Check that you are pointing to the proper firmware repository: **www.actel-ip.com/repositories/Firmware** Check with your network administrator to make sure you can communicate with Actel’s IP repository URL.

Why are there multiple firmware instances of the same type?
Some firmware cores have configurable options, and in certain cases you will have two peripherals of the same firmware VLNV. In this situation, you may want to configure each peripheral driver separately

Product Support

The Microsemi SoC Products Group backs its products with various support services including a Customer Technical Support Center and Non-Technical Customer Service. This appendix contains information about contacting the SoC Products Group and using these support services.

Contacting the Customer Technical Support Center

Microsemi staffs its Customer Technical Support Center with highly skilled engineers who can help answer your hardware, software, and design questions. The Customer Technical Support Center spends a great deal of time creating application notes and answers to FAQs. So, before you contact us, please visit our online resources. It is very likely we have already answered your questions.

Technical Support

Microsemi customers can receive technical support on Microsemi SoC products by calling Technical Support Hotline anytime Monday through Friday. Customers also have the option to interactively submit and track cases online at My Cases or submit questions through email anytime during the week.
Web: www.actel.com/mycases
Phone (North America): 1.800.262.1060
Phone (International): +1 650.318.4460
Email: soc_tech@microsemi.com

ITAR Technical Support

Microsemi customers can receive ITAR technical support on Microsemi SoC products by calling ITAR Technical Support Hotline: Monday through Friday, from 9 AM to 6 PM Pacific Time. Customers also have the option to interactively submit and track cases online at My Cases or submit questions through email anytime during the week.
Web: www.actel.com/mycases
Phone (North America): 1.888.988.ITAR
Phone (International): +1 650.318.4900
Email: soc_tech_itar@microsemi.com

Non-Technical Customer Service

Contact Customer Service for non-technical product support, such as product pricing, product upgrades, update information, order status, and authorization. Microsemi's customer service representatives are available Monday through Friday, from 8 AM to 5 PM Pacific Time, to answer non-technical questions.
Phone: +1 650.318.2470

Microsemi Corporation (NASDAQ: MSCC) offers the industry's most comprehensive portfolio of semiconductor technology. Committed to solving the most critical system challenges, Microsemi's products include high-performance, high-reliability analog and RF devices, mixed signal integrated circuits, FPGAs and customizable SoCs, and complete subsystems. Microsemi serves leading system manufacturers around the world in the defense, security, aerospace, enterprise, commercial, and industrial markets. Learn more at www.microsemi.com.

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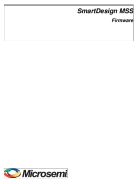
Documents / Resources

	Microsemi SmartDesign MSS Firmware Configurator [pdf] Owner's Manual SmartDesign MSS, Firmware Configurator, SmartDesign MSS Firmware Configurator, SmartDesign MSS Firmware, Configurator, Firmware

References

- FPGAs and PLDs | Microchip Technology
- FPGAs and PLDs | Microchip Technology
- Microsemi | Semiconductor & System Solutions | Power Matters