CN21007: Disabling SmartDebug Access to sNVM in Libero SoC Debug Policy Settings

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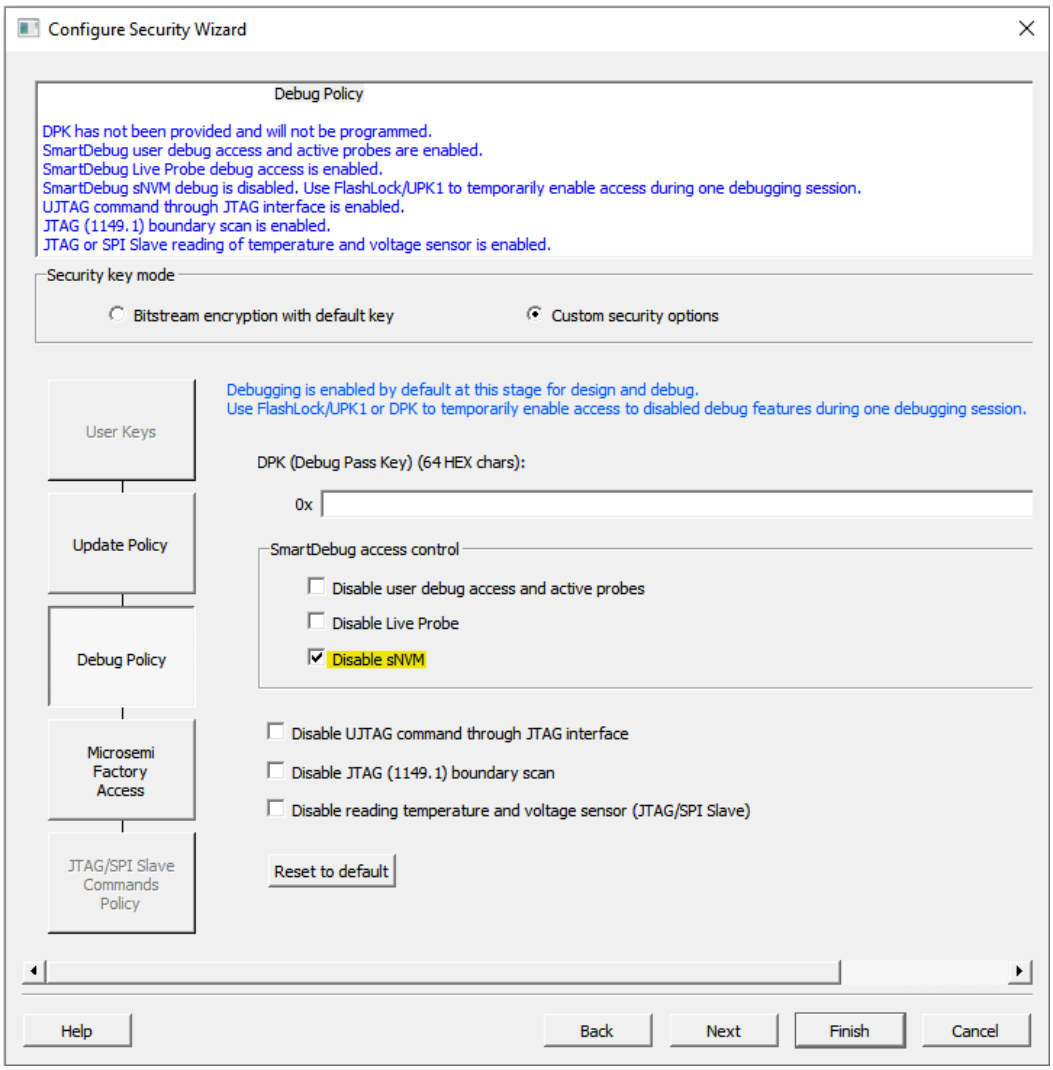
Description

With Libero SoC v2021.1, the user setting to disable SmartDebug access to sNVM is now enforced in user/debug pass key protected devices.

Reason for Change

Prior to Libero SoC v2021.1, disabling SmartDebug access to read the sNVM in Libero SoC's device Debug Policy settings did not affect the generated programming bitstream, and thus did not prevent SmartDebug access to the sNVM in user/debug pass key protected devices. This issue existed for PolarFire FPGAs starting with Libero SoC v12.0. The issue occurs if "Disable sNVM" is checked in the Libero SoC Debug Policy settings dialog of the "Configure Security" design flow step, or if the equivalent Tcl command is executed.

Figure 1 • Debug Policy Settings Window



Example Tcl command: `configure_tool -name {SPM} -params {disable_smartdebug_snvm:true}`

Application Impact

Running "SmartDebug Design" from any Libero SoC project targeting the device on the board will allow SmartDebug to read the sNVM content from non-authenticated pages without requiring the user/debug pass key.

Similarly, running SmartDebug in standalone mode with any debug database file (.DDC) that targets the device on the board will allow reading of non-authenticated sNVM pages without requiring the user/debug pass key.

There is no impact for authenticated sNVM clients when the corresponding User Security Key (USK) is not programmed into the device sNVM (that is, the user has unchecked "Reprogram" option in USK_CLIENT configuration) and the correct USK is not provided by the user during SmartDebug sNVM read. Reading these authenticated pages from SmartDebug without entering the correct USK will return all-zero data.

Required Action

To disable SmartDebug access to the sNVM without the user/debug pass key, re-run the "Configure Security" design flow step using Libero SoC v2021.1 with the desired user/debug pass key and "Disable sNVM" checked, then regenerate the programming bitstream and reprogram the device with the updated security settings.

Pre-existing designs opened in v2021.1 that already have "Disable sNVM" SmartDebug access policy configured will receive a message in the Libero SoC log window that the Programming File Generation design flow steps have been invalidated. The user must then re-confirm the settings in the "Configure Security Wizard" and regenerate the bitstream before reprogramming the device security settings.

Part Numbers Affected

MPF100T-1FCG484E	MPF200T-1FCG784E	MPF200TLS-FCG784I	MPF300T-FCG784E	MPF300TS-FCG784I
MPF100T-1FCG484I	MPF200T-1FCG784I	MPF200TLS-FCSG325I	MPF300T-FCG784I	MPF300TS-FCS536M
MPF100T-1FCSG325E	MPF200T-1FCSG325E	MPF200TLS-FCSG536I	MPF300T-FCSG536E	MPF300TS-FCSG536I
MPF100T-1FCSG325I	MPF200T-1FCSG325I	MPF200TLS-FCVG484I	MPF300T-FCSG536I	MPF300TS-FCV484M
MPF100T-1FCVG484E	MPF200T-1FCSG536E	MPF200TS- FCS325M	MPF300T-FCVG484E	MPF300TS-FCVG484I
MPF100T-1FCVG484I	MPF200T-1FCSG536I	MPF200TS-1FCG484I	MPF300T-FCVG484I	MPF300XT-1FCG484I
MPF100T-FCG484E	MPF200T-1FCVG484E	MPF200TS-1FCG784I	MPF300TL-FCG1152E	MPF500T-1FCG1152E
MPF100T-FCG484I	MPF200T-1FCVG484I	MPF200TS-1FCSG325I	MPF300TL-FCG1152I	MPF500T-1FCG1152I
MPF100T-FCSG325E	MPF200T-FCG484E	MPF200TS-1FCSG536I	MPF300TL-FCG484E	MPF500T-1FCG784E
MPF100T-FCSG325I	MPF200T-FCG484I	MPF200TS-1FCVG484I	MPF300TL-FCG484I	MPF500T-1FCG784I
MPF100T-FCVG484E	MPF200T-FCG784E	MPF200TS-FCG484I	MPF300TL-FCG784E	MPF500T-FCG1152E
MPF100T-FCVG484I	MPF200T-FCG784I	MPF200TS-FCG784I	MPF300TL-FCG784I	MPF500T-FCG1152I
MPF100TL-FCG484E	MPF200T-FCSG325E	MPF200TS-FCSG325I	MPF300TL-FCSG536E	MPF500T-FCG784E
MPF100TL-FCG484I	MPF200T-FCSG325I	MPF200TS-FCSG536I	MPF300TL-FCSG536I	MPF500T-FCG784I
MPF100TL-FCSG325E	MPF200T-FCSG536E	MPF200TS-FCVG484I	MPF300TL-FCVG484E	MPF500TL-FCG1152E
MPF100TL-FCSG325I	MPF200T-FCSG536I	MPF300T-1FCG1152E	MPF300TL-FCVG484I	MPF500TL-FCG1152I
MPF100TL-FCVG484E	MPF200T-FCVG484E	MPF300T-1FCG1152I	MPF300TLS-FCG1152I	MPF500TL-FCG784E
MPF100TL-FCVG484I	MPF200T-FCVG484I	MPF300T-1FCG484E	MPF300TLS-FCG484I	MPF500TL-FCG784I
MPF100TLS-FCG484I	MPF200TL-FCG484E	MPF300T-1FCG484I	MPF300TLS-FCG784I	MPF500TLS-FCG1152I
MPF100TLS-FCSG325I	MPF200TL-FCG484I	MPF300T-1FCG784E	MPF300TLS-FCSG536I	MPF500TLS-FCG784I
MPF100TLS-FCVG484I	MPF200TL-FCG784E	MPF300T-1FCG784I	MPF300TLS-FCVG484I	MPF500TS-1FCG1152I
MPF100TS-1FCG484I	MPF200TL-FCG784I	MPF300T-1FCSG536E	MPF300TS-1FCG1152I	MPF500TS-1FCG784I
MPF100TS-1FCSG325I	MPF200TL-FCSG325E	MPF300T-1FCSG536I	MPF300TS-1FCG484I	MPF500TS-FC1152M
MPF100TS-1FCVG484I	MPF200TL-FCSG325I	MPF300T-1FCVG484E	MPF300TS-1FCG784I	MPF500TS-FC784M
MPF100TS-FCG484I	MPF200TL-FCSG536E	MPF300T-1FCVG484I	MPF300TS-1FCSG536I	MPF500TS-FCG1152I
MPF100TS-FCSG325I	MPF200TL-FCSG536I	MPF300T-FCG1152E	MPF300TS-1FCVG484I	MPF500TS-FCG784I
MPF100TS-FCVG484I	MPF200TL-FCVG484E	MPF300T-FCG1152I	MPF300TS-FC484M	
MPF200T-1FCG484E	MPF200TL-FCVG484I	MPF300T-FCG484E	MPF300TS-FCG1152I	
MPF200T-1FCG484I	MPF200TLS-FCG484I	MPF300T-FCG484I	MPF300TS-FCG484I	

Contact Information

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Regards,

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Microsemi
2355 W. Chandler Blvd.
Chandler, AZ 85224 USA

Within the USA: +1 (480) 792-7200
Fax: +1 (480) 792-7277

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