

Usage Note: XDS560v2 Emulator goes into SAFE Mode if it is powered off for 10 consecutive times without a complete boot

Rev: 0.2

Description:

XDS560V2 Mezzanine emulator has a processor which runs the Linux operating system. Every time the emulator is powered up, it boots its internal Linux operating system that then allows the user to connect to the EVM board via CCS. This Linux operating system running on the XDS560V2 mezzanine emulator runs from a NAND FLASH file system. FLASH file systems contain integrated management operations for wear-leveling and other tasks. If the power is cut before the Linux completes booting, there is risk of damage to the filesystem. The 'SAFE' mode functionality is integrated to prevent file system corruption from repeated boot operations without allowing Linux to fully boot. The XDS560V2 Mezzanine emulator software keeps track of the unsuccessful boot attempts of the emulator board during the boot process. Ten consecutive unsuccessful Linux boot attempts will result in the XDS560V2 Mezzanine emulator going into 'SAFE' mode.

The 'SAFE' mode of the XDS560V2 Mezzanine emulator will not allow the user to connect to the EVM board. CCS will report a connection error when SAFE mode is activated. When SAFE mode is active the LEDs D4, D5 and D6 will blink simultaneously.

Workaround:

The 'BH560v2 Config Utility' is used to clear the SAFE Mode of the emulator and bring the emulator to a normal working mode. The procedure for clearing the SAFE Mode using 'BH560v2 Config Utility' follows:

1. Power on the EVM containing the XDS560V2 Mezzanine emulator
2. Open 'BH560v2 Config Utility' with XDS560V2 Mezzanine emulator connected to your PC via a USB cable.
3. The utility will report the emulator in the SAFE Mode.
4. Use the "Clear Safe Mode" button to clear the SAFE mode state of the emulator.
5. Close the 'BH560v2 Config Utility' and power cycle the EVM
6. Connect the emulator using CCS after the emulator completes its boot cycle.

The XDS560v2 Mezzanine emulator takes approximately 30 seconds to boot-up. The successful booting of the XDS560v2 Mezzanine emulator is indicated by the following LED sequence:

Green LED (D3) turns ON

Yellow LED (D2) and Red LED (D1) turns ON

Green LED (D3) blinks and turns OFF

After the completion of booting XDS560v2 mezzanine emulator, it is ready to interface with CCS. Once CCS is connected to the target DSP, Green LED D4 turns ON.

Usage Note: XDS560v2 Emulator fails to connect properly and it is not in Safe mode

Rev: 0.1

Description:

XDS560V2 Mezzanine emulator has a processor which runs the Linux operating system which boots from a FLASH memory device. This operating system interacts with a data storage structure also contained in the FLASH memory device. If the storage for the Linux operating system or this data storage becomes corrupted, the XDS560V2 Mezzanine emulator will fail to boot correctly or to connect to CCS.

This operating system has a 2-stage boot process. Whenever the 2nd stage fails to operate due to image corruption, the unit can be forced into the 'Safe' mode. 'Safe' mode only executes from the 1st stage and it supports image re-programming. Units that are failing due to image corruption can be forced into 'Safe' mode and then recovered by re-programming the operating system image.

Workaround:

Note: this sequence of steps should only be executed on a unit that is not in 'Safe' mode. Multiple power cycles of the mezzanine emulator will be used to force it into 'Safe' mode, and then the image can be re-programmed. The 'BH560v2 Config Utility' is used to re-program the emulator and bring the emulator to a normal working mode. The procedure for programming the XDS560V2 emulator using 'BH560v2 Config Utility' follows:

1. Power on the EVM containing the XDS560V2 Mezzanine emulator for about 10 seconds and then turn it back off for about 5 seconds. Repeat this sequence 10 times to force the emulator to enter the 'Safe' mode.
2. Power on the EVM containing the XDS560V2 Mezzanine emulator
3. Open 'BH560v2 Config Utility' with XDS560V2 Mezzanine emulator connected to your PC via a USB cable.
4. The utility will report the emulator in the SAFE Mode.
5. Select "Update ...".
6. Go to Blackhawk firmware folder – normally
"C:\ti\ccsv5\ccs_base\emulation\Blackhawk\Bh560v2\firmware".
7. Select bh560v2_fw_mezzanine.
8. Wait until the firmware update completes (do not power down during this step).
9. After completion you should see the yellow and red LEDs on.
10. Close the 'BH560v2 Config Utility' and power cycle the EVM
11. Connect the emulator using CCS after the emulator completes its boot cycle.

The XDS560v2 Mezzanine emulator takes approximately 30 seconds to boot-up. The successful booting of the XDS560v2 Mezzanine emulator is indicated by the following LED sequence:

Green LED (D3) turns ON

Yellow LED (D2) and Red LED (D1) turns ON

Green LED (D3) blinks and turns OFF

After the completion of booting XDS560v2 mezzanine emulator, it is ready to interface with CCS. Once CCS is connected to the target DSP, Green LED D4 turns ON.