SigFlash470 Package for JTAGjet

Version 3.26 Release 1.00 (11/18/2005)

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1. Introduction

This document describes installation and usage of Texas Instruments Flash470 utility with JTAGjet emulator from Signum Systems. For convenience, complete package (including original TI's Flash470 package) is distributes as single ZIP file, no other software is necessary.

NOTE: This document does not cover Flash470 specific documentation – it only explains JTAGjet specific details. Please consult original Flash470 documentation (available in Flash470.pdf file).

2. Revision and status

Version 3.26 - Release 1.00, November 18,2005

- First release (integration with Flash470 version 3.26)

3. Installation

This **SigFlash470** package is distributed in the following ZIP file:

sigflash470_3_26_rel_1_00.zip

where:

3_26 - version number of original TIs Flash470 package (assigned by Texas Instruments).
1_00 - release number (assigned by Signum Systems).

Installation is done by unzipping package ZIP file (usually to the **C:\Flash470** directory). Make sure, that you will unzip it with sub-directories preserved.

3.1. Directory Structure

Installation directory consist of the following files:

SigFlash470.pdf	- This document.
Flash470.pdf	- Documentation from original TI's package.
...	- All files from original TI's package.
emulator.emu	- File which was modified from the original TI's package (JTAGjet emulator entry was added.)
Signum...	- JTAGjet CCS driver components.
Signum\...	- Subdirectory with Signum-specific supplementary files.
Signum\Drivers\USB\SigUSB.*	- JTAGjet USB drivers (see below).

This information could be helpful if someone needs to merge this release with any newer release from TI. All files which do not exist in the TI's package should be copied. Only the emulator.emu file needs to be updated (by adding JTAGjet emulator entry).

3.2. JTAGjet USB Driver Installation

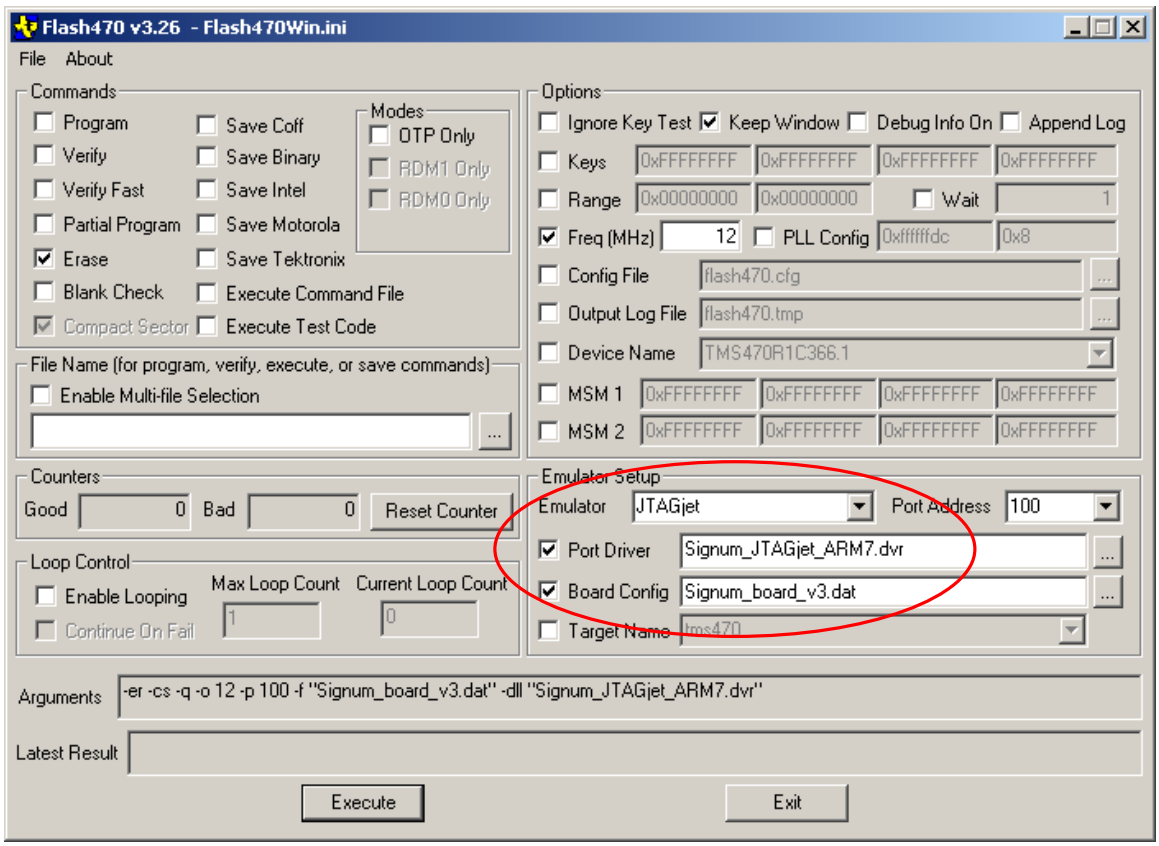
If **JTAGjet** was never used on the particular PC, you will be asked to install USB drivers for JTAGjet (after connecting USB cable to it). Browse to the **C:\Flash470\Signum\Drivers\USB** directory and select the **SigUSB.inf** file.

For best performance, it is strongly recommended to use USB2.0 port to connect to JTAGjet.

4. Starting Flash470Win

4.1. Initial Settings

After staring the **Flash470Win.exe** application, select JTAGjet emulator from list of emulators and select appropriate board file for it (these settings are circled – Port Address is ignored by JTAGjet):



All settings will be saved between runs, so JTAGjet needs to be selected only once. For JTAGjet, two board files are provided that correspond to the board files supplied by TI:

Signum_board-v3.dat - for single TMS470 CPU devices (based on board-v3.dat)
Signum_boardab-v3.dat - for two TMS470 devices on JTAG (based on boardab-v3.dat)

If you have your own board file (version 3), the following lines need to be added to be compatible with JTAGjet:

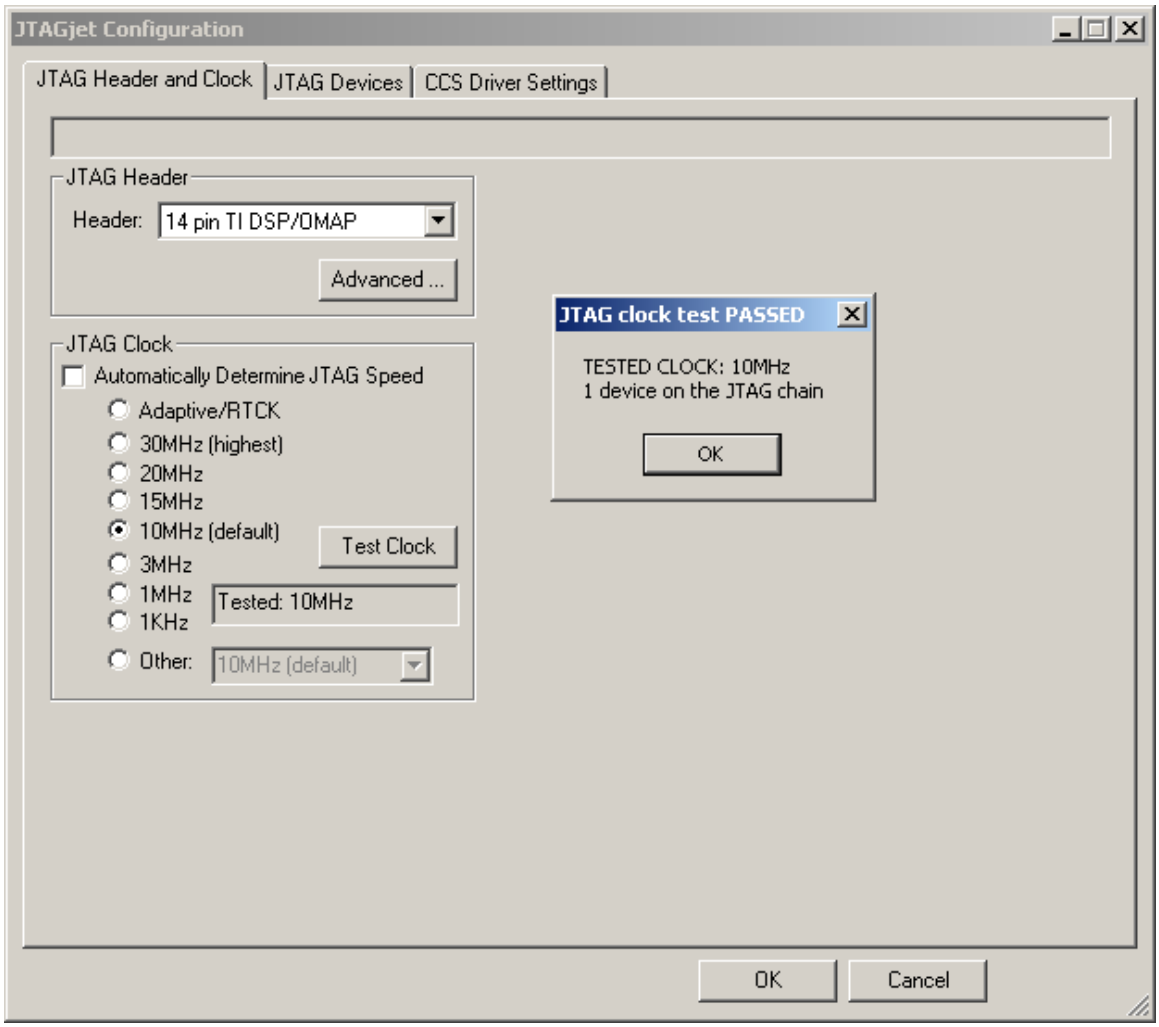
```
$ sepk
  pod_drvr=Signum_JTAGjet.dll
$ /
```

After the board file is selected, there may be a need to adjust some target specific settings (CPU frequency, PLL etc.) – see **Flash470.pdf** file for more details.

NOTE: The Device Name does not need to be selected, as the Flash470 automatically detects the TMS470 devices. The settings shown above were sufficient to Erase and Program the TMS470R1VF338 device on a target board with 12 MHz crystal.

4.2. Adjusting JTAGjet-specific Settings

The **SigFlash470** package includes JTAGjet configuration utility program **SignumConfig.exe**. This program may be run at any time to setup JTAG parameters and verify JTAG scan chain integrity. Click the **Test Clock** button and the following message will be displayed:



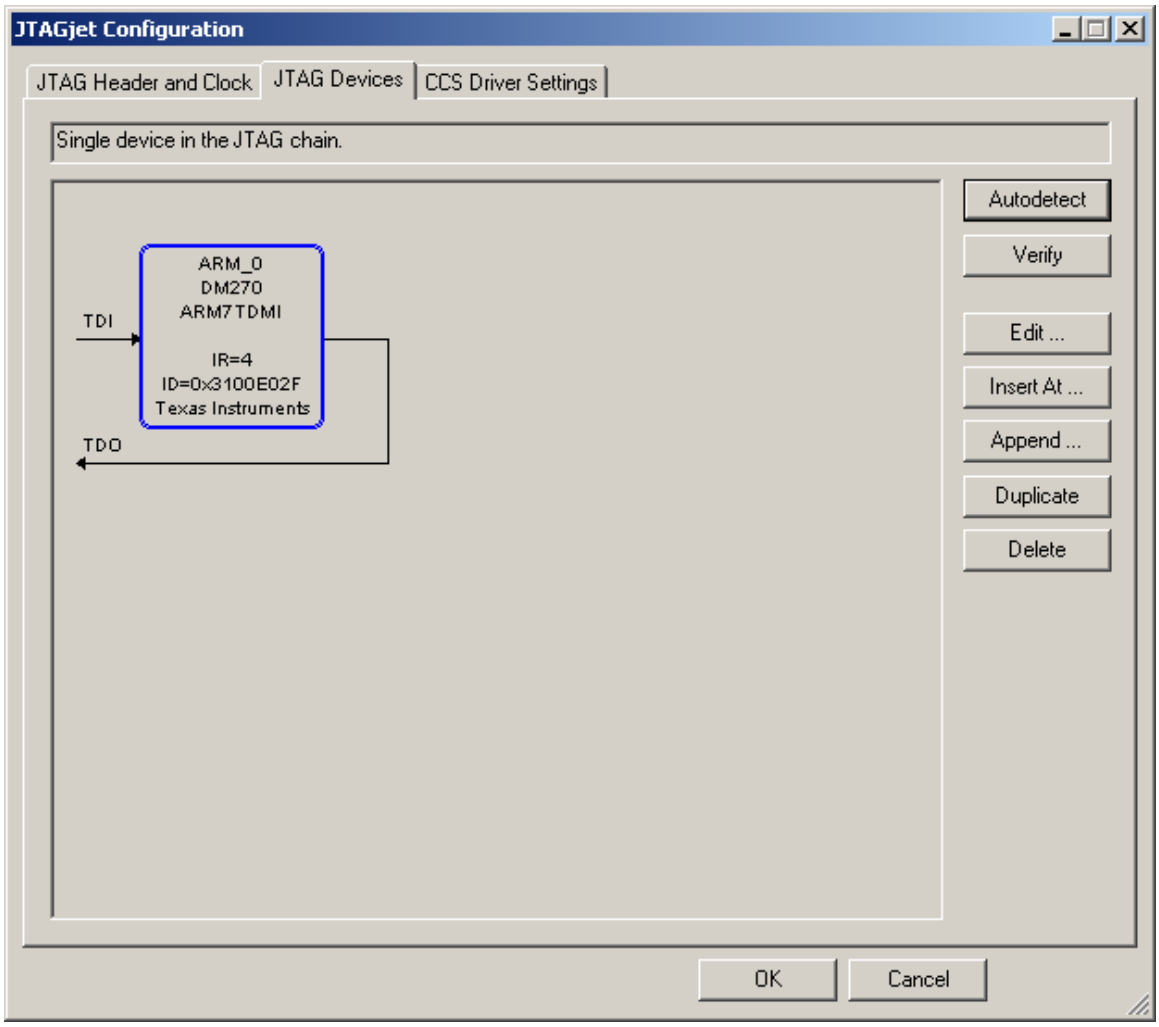
It is recommended to keep the default setting (10MHz clock and TI-style JTAG header - these settings are compatible with XDS510 emulators), but you may wish to adjust them if needed. It is important to change the type of JTAG header if you use ARM-style 20-pin connector (this could be the case with the Multi-ICE compatible boards).

If you do not press **Test Clock**, clock will be tested when clicking OK or going to a different tab. You should not continue if basic JTAG clock test is not working. Clocks higher than 10MHz can be used for faster operation if your board can support it.

The above JTAG configuration dialog box will be displayed automatically when starting flash job in the following two cases:

- When starting Flash470 job for the very first time on a particular PC.
- Each time after previous connection to the processor was unsuccessful.

It is also possible to auto-detect and verify JTAG devices connected on the JTAG chain. Click **Autodetect** and the following JTAG geometry should be displayed for boards with a single TMS470 device:



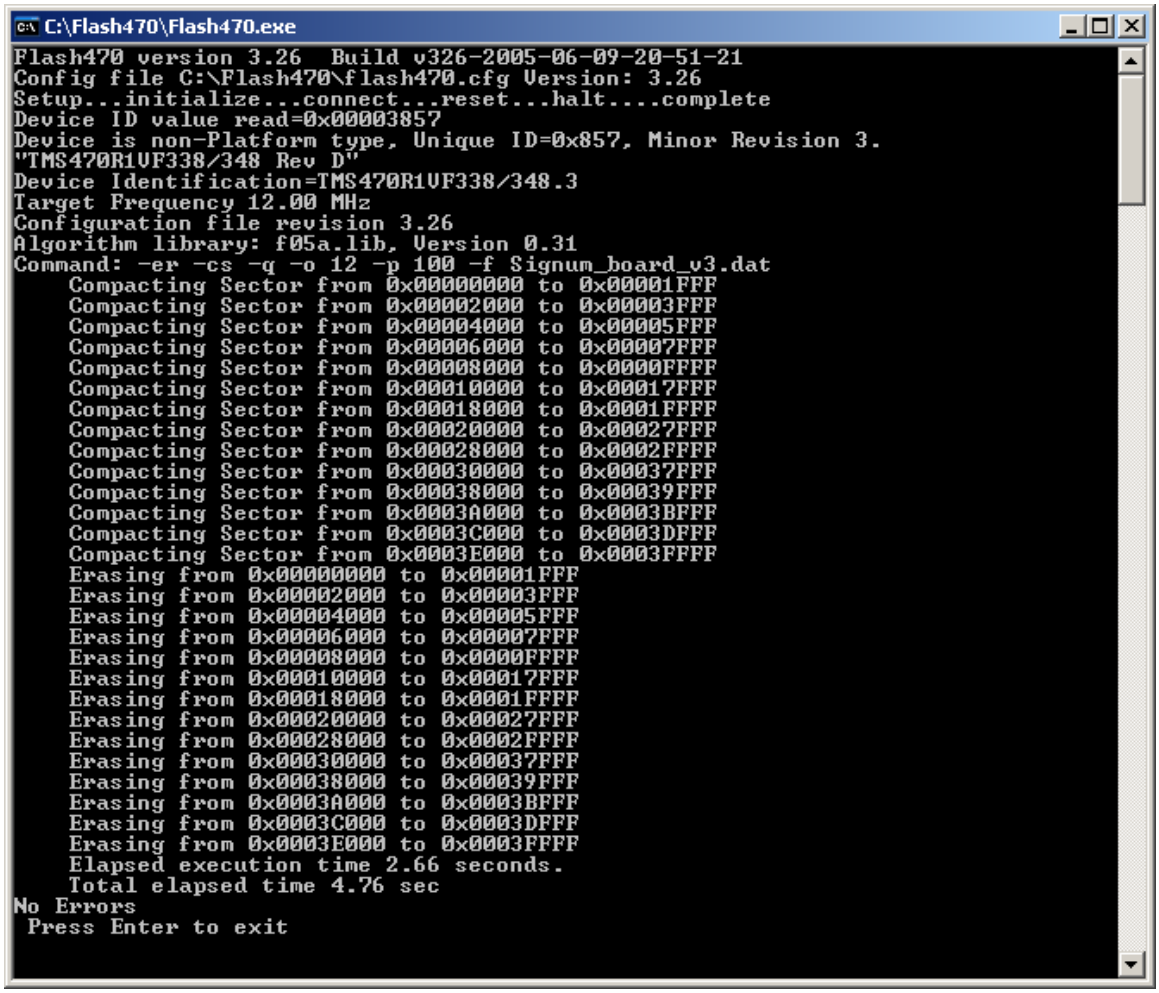
NOTE 1:
Do not worry about DM270 being displayed. Many Texas Instruments' devices have the same JTAG ID (0x3100E02F in this case) and it is impossible to detect exact type of device by reading JTAG ID only. Flash470 will interrogate the device in more detail and report the actual device name correctly.

NOTE 2:
Results of this auto-detection will not used by the Flash470 program. If more devices are detected on the JTAG chain, the user must select (or create) the correct board configuration file. Flash470 depends on supplied board files, which define the JTAG geometry.

The CCS Driver Settings tab and the Advanced ... button allow more sophisticated JTAG and driver controls. Detailed description of the SignumConfig.exe program may be found in the installation instructions for the Code Composer Studio drivers for JTAGjet.

5. Example Session

The following is a snapshot of a typical flash erasing process:



6. Validation

JTAGjet with the SigFlash470 drivers was validated on several TMS470 boards, different JTAG clocks and two JTAG headers: the standard 14-pin TI header and 20-pin ARM header.

WARNING – If your program contains the Key area which is programmed into the device, please write them down or you will not be able to erase and reprogram the device next time.

7. Support

If you experience problems or need help with JTAGjet, please write support@signum.com .
More information on our products may be found on our web site at www.signum.com