

User's Guide
for
PRGS430 Serializing Shell (PRGSS)

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From

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1. Overview

The PRGS430 Serializing Shell (PRGSS) provides a convenient means for enabling production programming with the Texas Instruments PRGS430.

1.1 Full Features

The key features of this product are:

- One-button operation
- High-level control of PRGS430, reduces configuration errors
- Part counter (up or down)
- Write/Verify access to flash programming
- Serialization of individual parts as BYTES, WORDs, or DWORDs
- Selection of serialization address
- Mass erase prior to programming
- "Across-the-room" visibility of programming results
- VCC selection
- Win32 host application
- Optional information flash erase prior to programming. This allows preservation of calibration data or additional constants programmed into information flash.
- Optional fuse-blow
- Optional fuse-check
- Access to target via standard 14-pin header
- Session state persists in registry

1.2 Demo Features

By choosing Run as Demo from the security key dialog, the serializing shell can be run in demo mode. The demo mode features are the same as the full features, with the following exceptions:

- No fuse blow
- No fuse check
- Input file size limited to 400 bytes (about 128 bytes of code).

1.3 Installation

To install the serializing shell, please place the SerialProgShell .exe executable into the same folder as your PRGS430 was installed into.

1.4 Customization

If you require additional custom features, these can be implemented in a serializing shell specific to you for a small additional cost.

2. License Agreement

Prior to purchasing the full version of the serializing shell, please review the licensing agreement. It is available for download from our website www.softbaugh.com, and is reprinted here for convenience.

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3. Host Software

The host software utility is provided to easily program targets with your code. A screen capture of the SerialProgShell.exe host software is provided below:

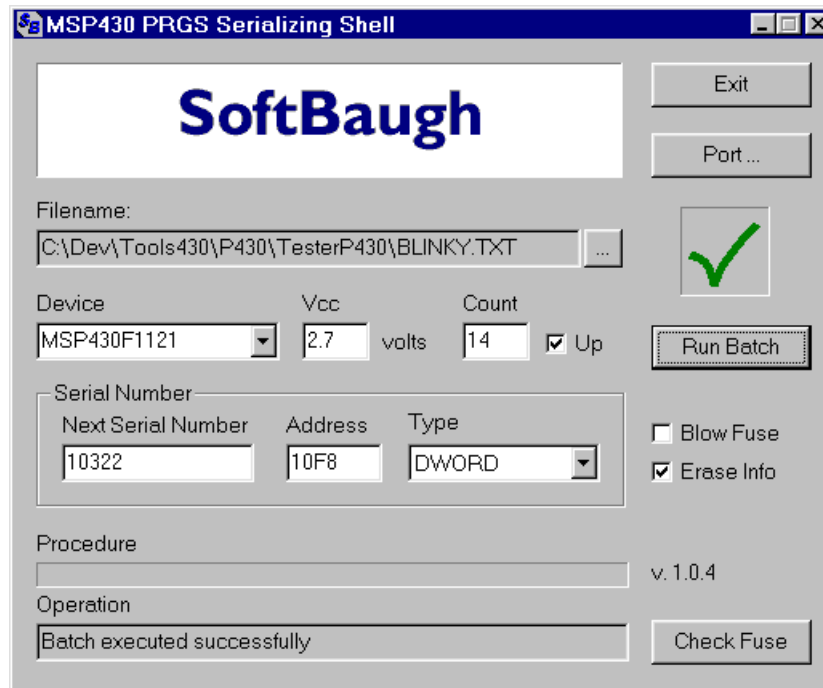


Figure 3-1 Serializing Shell Software Operation

The host software is used to control the operation of the PRGS430 programmer. The components of the host software GUI are discussed in detail in the following sections.

3.1 Port Button

The *Port Button* allows selection of serial port and baud rate on the host PC. 115200 is the default, but if comm errors occur, dropback to a lower rate.

3.2 Filename ... Button

The *Filename ... Button* prompts for an TI format .txt file that will be written to the target. See the next chapter for how to produce this file.

3.3 Result Display

The Result Display gives a visual indication of the status of the last programming operation. If successful, a giant green checkmark is displayed. If failure, a giant red 'X'

is displayed. If no previous operation, or an operation in progress, a giant gray question mark is displayed.

3.4 Device Dropdown

The *Device Dropdown* allows selection of the target device. If your device is not listed, update your PRGS430 installation from www.ti.com, and make sure the device.cfg file is updated. Note: Please backup your existing PRGS430 installation prior to updating so you can restore to the old version if necessary.

3.5 VCC Entry Box

The *VCC Entry Box* allows selection of the proper programming voltage for your target. If you consistently get verify errors, please increase the programming voltage. Note: Current MSP430 flash devices require 2.7v minimum to program, 3.3v is recommended.

3.6 Count Entry Box

The *Count Entry Box* shows the current count of devices correctly programmed. This can either count up or down.

3.7 Up Check Box

The *Up Check Box* allows selection of whether the parts are counted up or down. If checked, the parts will count up.

3.8 Run Batch Button

The *Run Batch Button* launches a programming cycle, consisting of a mass erase, an optional information flash erase, a write with verify, an optional serial number write with verify, and an optional JTAG fuse blow.

3.9 Serial Number Entry Box

The *Serial Number Entry Box* contains the next serial number to be programmed, if any. This serial number is a decimal number, stored as a binary BYTE, WORD, or DWORD, least significant byte first, and placed at the serial number address.

3.10 Serial Number Address Entry Box

The *Serial Number Address Entry Box* allows specification of the address of the first byte to be programmed into the target. It is formatted as a two-byte hexadecimal number.

3.11 Serial Number Type Dropdown

The Serial Number Type Dropdown allows specification of the type of serial number to be programmed. The valid options are:

- (none) - No serial number will be programmed.
- BYTE - The serial number will be programmed as a single byte value, and truncated if necessary.
- WORD - The serial number will be programmed as a two-byte value, and truncated if necessary.
- DWORD - The serial number will be programmed as a four-byte value.

3.12 Blow Fuse Check Box

The *Blow Fuse Check Box*, if checked, directs that the JTAG fuse is to be blown after the verify operation, if successful.

3.13 Erase Info Check Box

If checked, the *Erase Info Check Box* directs that the information flash will be erased during the programming operation. If your target parts already have calibration data stored in them in the information flash, you may wish to leave this flash undisturbed. Alternatively, you may wish to store calibration data after production using our BLMSPF Flash Bootloader, which can access MSP430 devices after the JTAG fuse is blown.

3.14 Procedure Display

The *Procedure Display* gives a progress indication of the current operation.

3.15 Operation Display

The *Operation Display* gives text feedback about the progress of the current operation.

3.16 Check Fuse Button

The *Check Fuse Button* allows the fuse to be checked after programming, if desired.

4. IAR Text File Output

While users of the SBSIM430 (shameless product plug) environment can easily produce the TI-format text file required for use with the PRGS430 and the PRGSS serializing shell, users of other tools may not be so fortunate.

To enable TI-format text file output from IAR:

1. Choose the Project menu
2. Select the Options item
3. Choose XLINK from the list on the left
4. Select the Output tab
5. Select Format/Other
6. Choose msp430-txt from the list