

ML605 Restoring Flash Contents

December 2009

Overview

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Note: This presentation applies to the ML605

ML605 Restoring Flash Contents Description

▪ Description

- A CompactFlash image is provided for restoring the ML605 CompactFlash card
- The ISE iMPACT tool is used to restore the onboard non-volatile memories with the contents used in the [ML605 Getting Started Guide](#) (UG533) for the Platform Flash and the P30T Linear BPI Flash

▪ Reference Design IP

- Uses XTP044 PCIe x8 Gen1 output files to program Platform Flash
- Uses XTP056 BIST output files to program P30T Linear BPI Flash

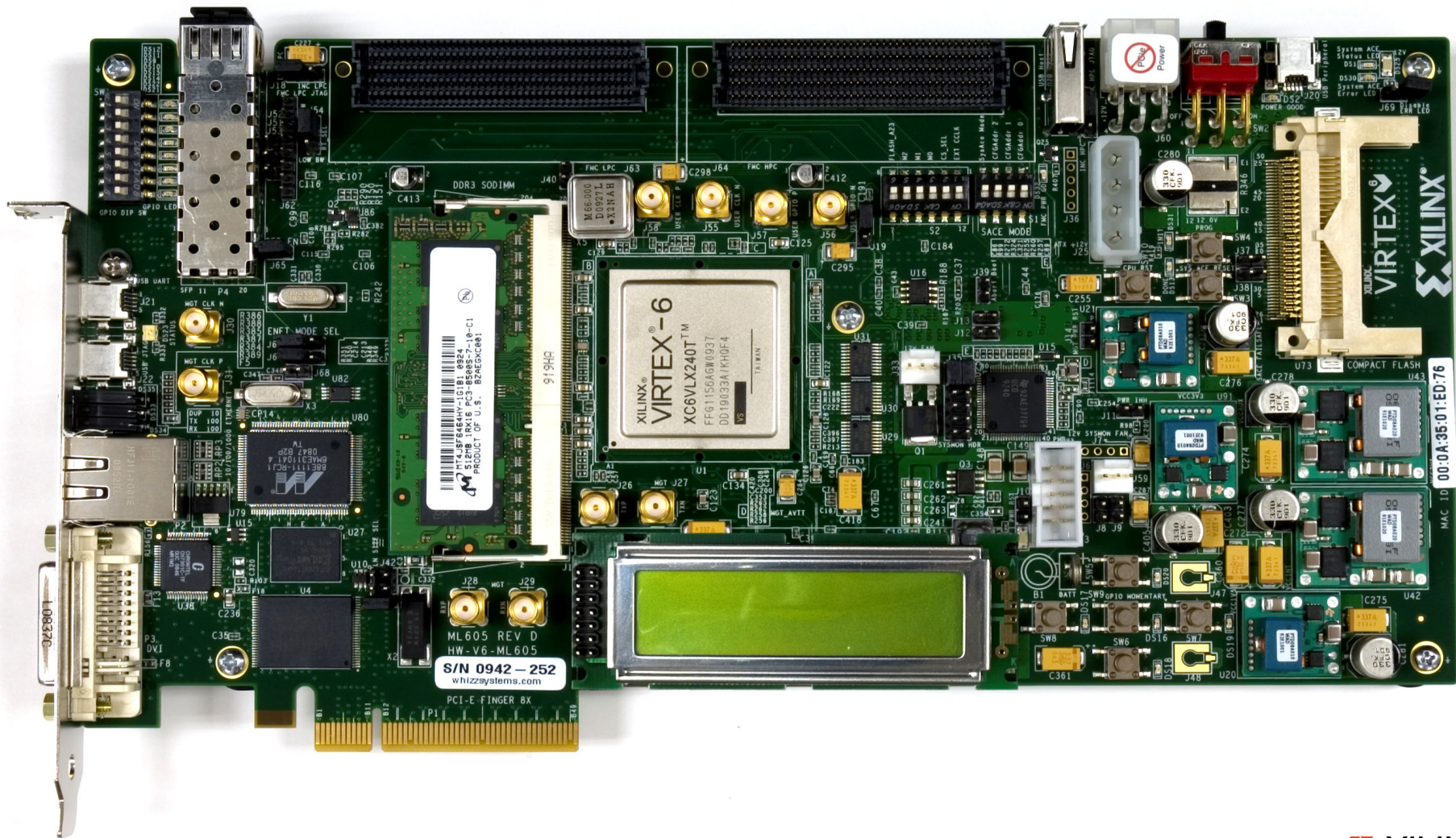
▪ Reference Design Source and Applications

- See [XTP044](#) and [XTP056](#)

▪ Files for Flash Restoration

- [rdf0021.zip](#) – Platform and P30T BPI Flash Devices
- [rdf0022.zip](#) – CompactFlash

Xilinx ML605 Board



Note: Presentation applies to the ML605

ISE Software Requirement

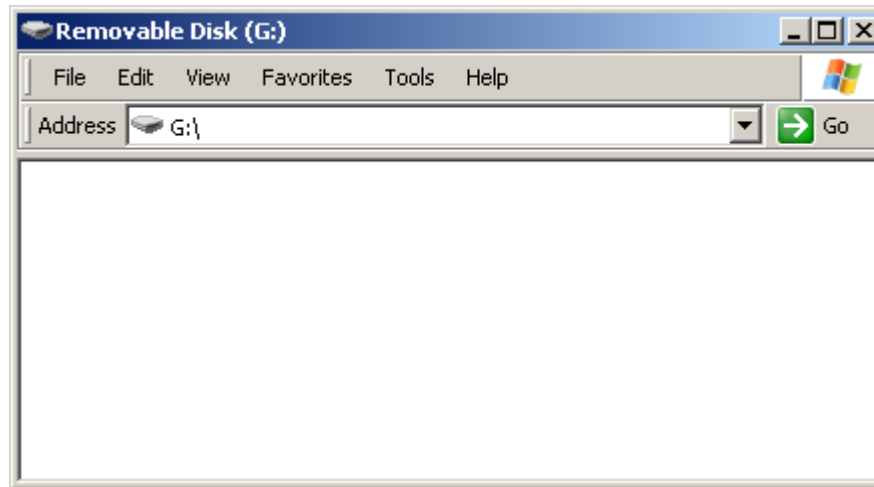
- Xilinx ISE 11.4 software



Restoring ML605 CompactFlash

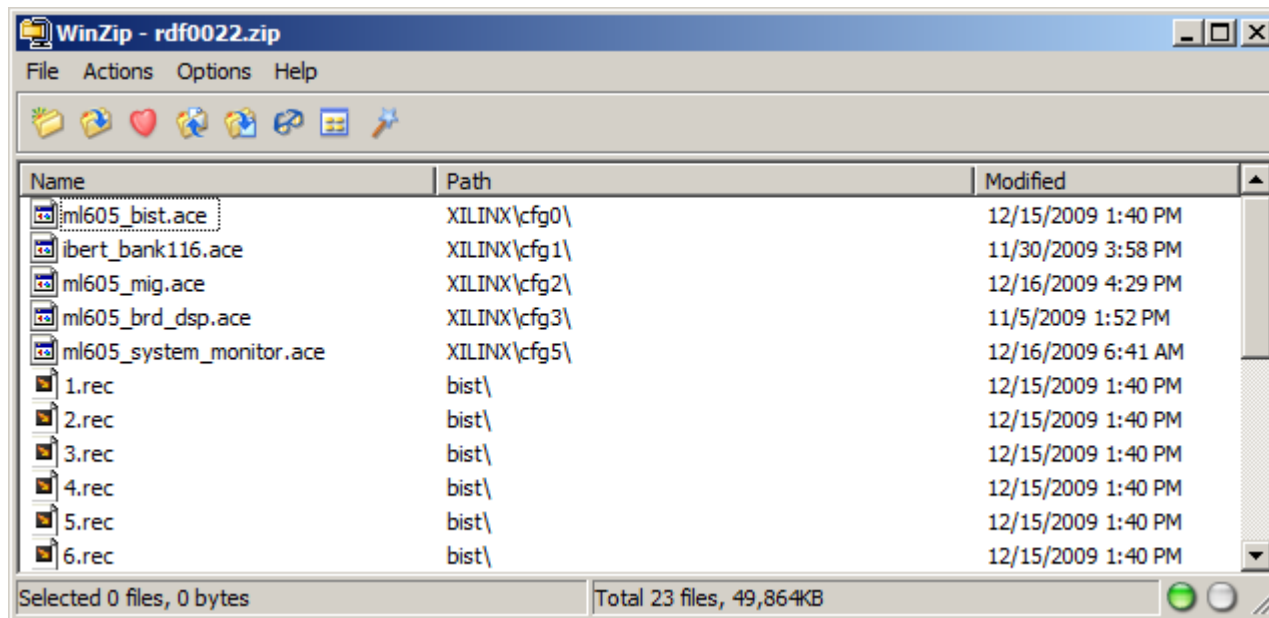
Restoring ML605 CompactFlash

- Use a CompactFlash reader to mount the ML605 CompactFlash as a disk drive
- Delete all files on this drive



Restoring ML605 CompactFlash

- Unzip the rdf0022.zip file to your CompactFlash drive
 - <https://secure.xilinx.com/webreg/clickthrough.do?cid=139977>



Restoring ML605 CompactFlash

- **After Restoring the CompactFlash, four designs are available:**
 - CFG0 – Built-In Self Test (BIST)
 - See [XTP056](#) – ML605 BIST Flash Application for details
 - CFG1 – IBERT
 - See [XTP046](#) – ML605 GTX IBERT Design Creation for details
 - CFG2 – MIG
 - See [XTP047](#) – ML605 MIG Design Creation for details
 - CFG5 – System Monitor
 - See [XTP048](#) – ML605 System Monitor for details

Restoring ML605 Platform and P30T BPI Flash

Restoring ML605 Platform and P30T BPI Flash

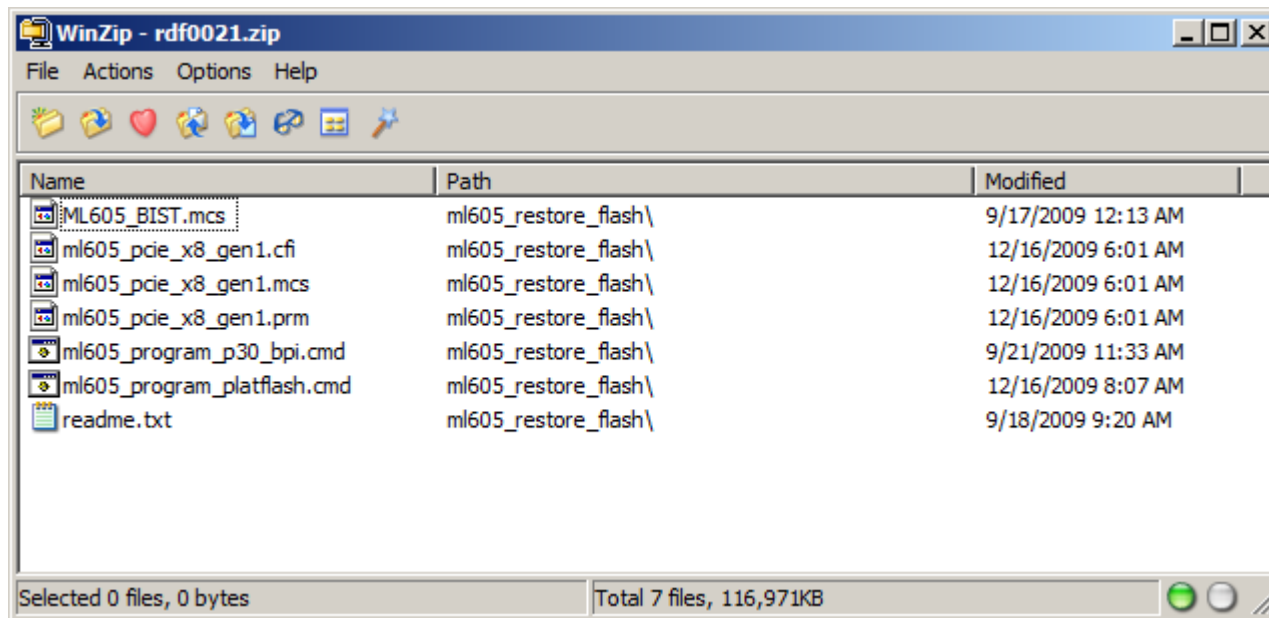
- Power on the ML605 board
- Connect a USB Type-A to Mini-B cable to the USB JTAG connector on the ML605 board
 - Connect this cable to your PC



Note: Presentation applies to the ML605

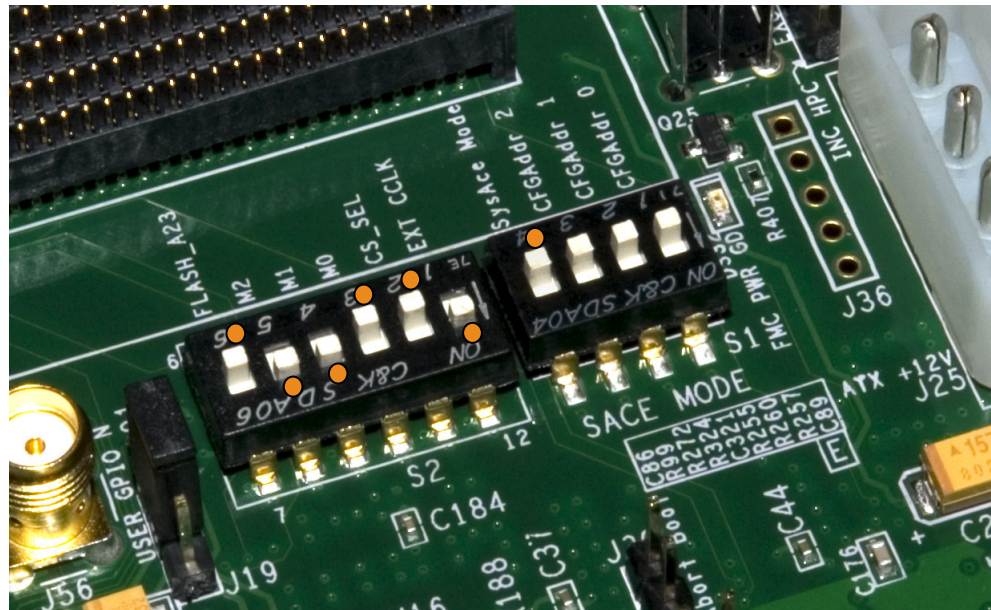
Restoring ML605 Platform and P30T BPI Flash

- Unzip the rdf0021.zip file to your C:\ drive
 - <https://secure.xilinx.com/webreg/clickthrough.do?cid=139976>



Restoring ML605 Platform and P30T BPI Flash

- **Set S2 to 011001 (1 = on, Position 6 → Position 1)**
 - This selects Platform Flash
 - Mode Switches set to Slave SelectMAP
- **Set S1 to 0XXX (X = Don't care, Position 4 → Position 1)**
 - This disables JTAG configuration from the Compact Flash

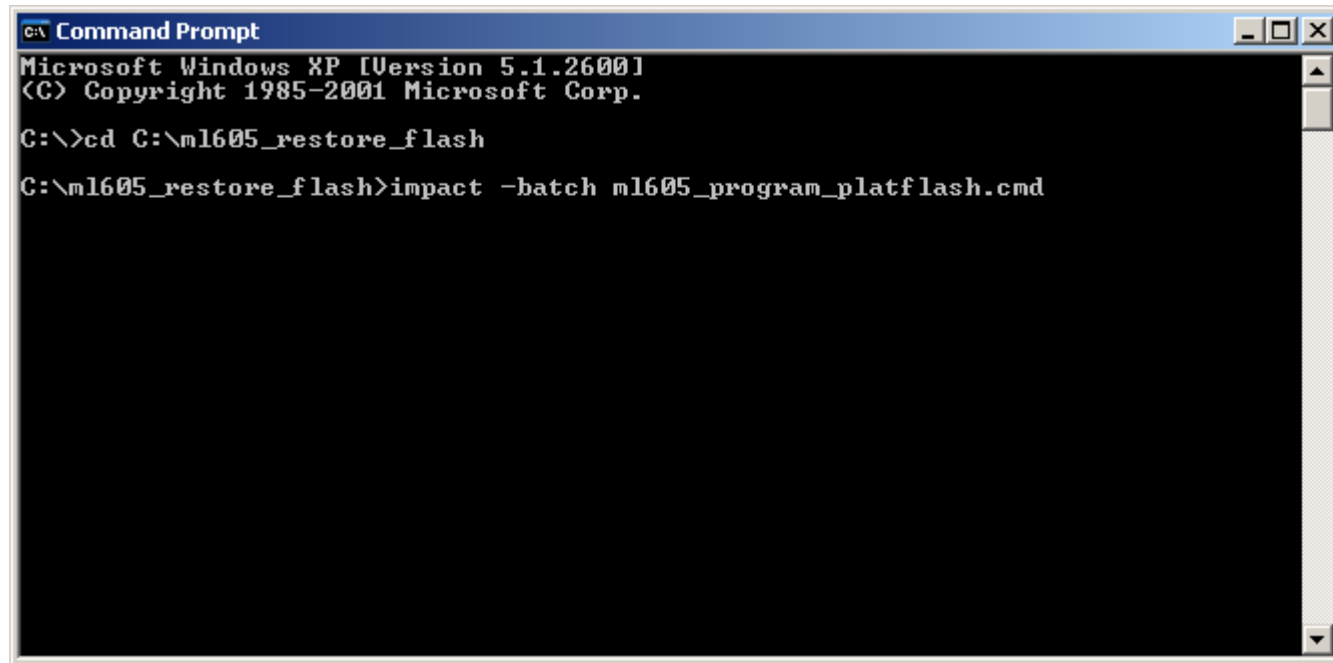


Restoring ML605 Platform and P30T BPI Flash

- **Program the Platform Flash**

`cd C:\ml605_restore_flash`

`impact -batch ml605_program_platflash.cmd`

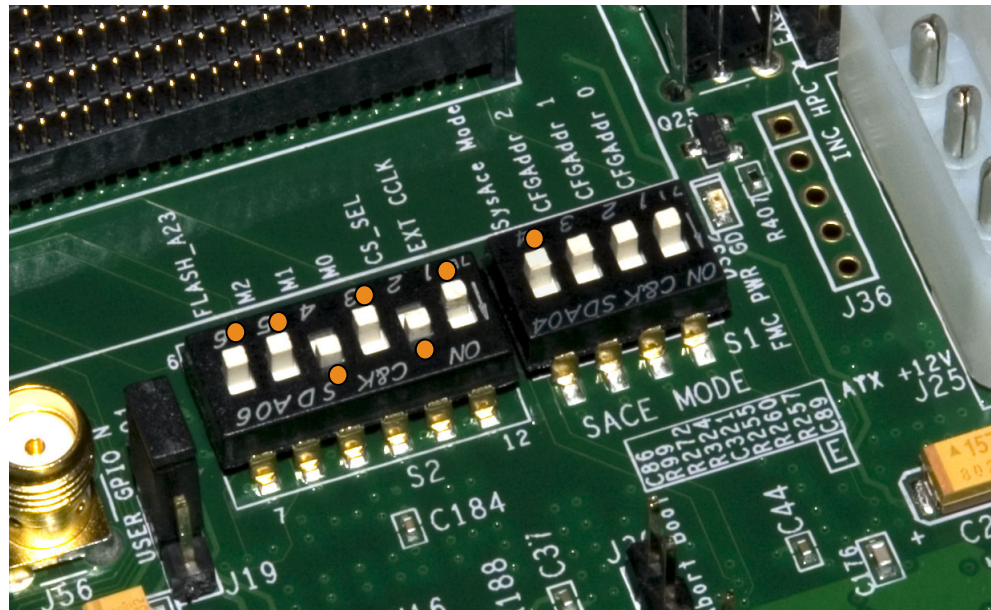


A screenshot of a Windows Command Prompt window titled "C:\ Command Prompt". The window shows the following text: "Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp." followed by the command sequence: "C:\>cd C:\ml605_restore_flash" and "C:\ml605_restore_flash>impact -batch ml605_program_platflash.cmd". The command prompt has a standard Windows XP interface with a blue title bar and a scroll bar on the right.

Note: Takes about 15 minutes

Restoring ML605 Platform and P30T BPI Flash

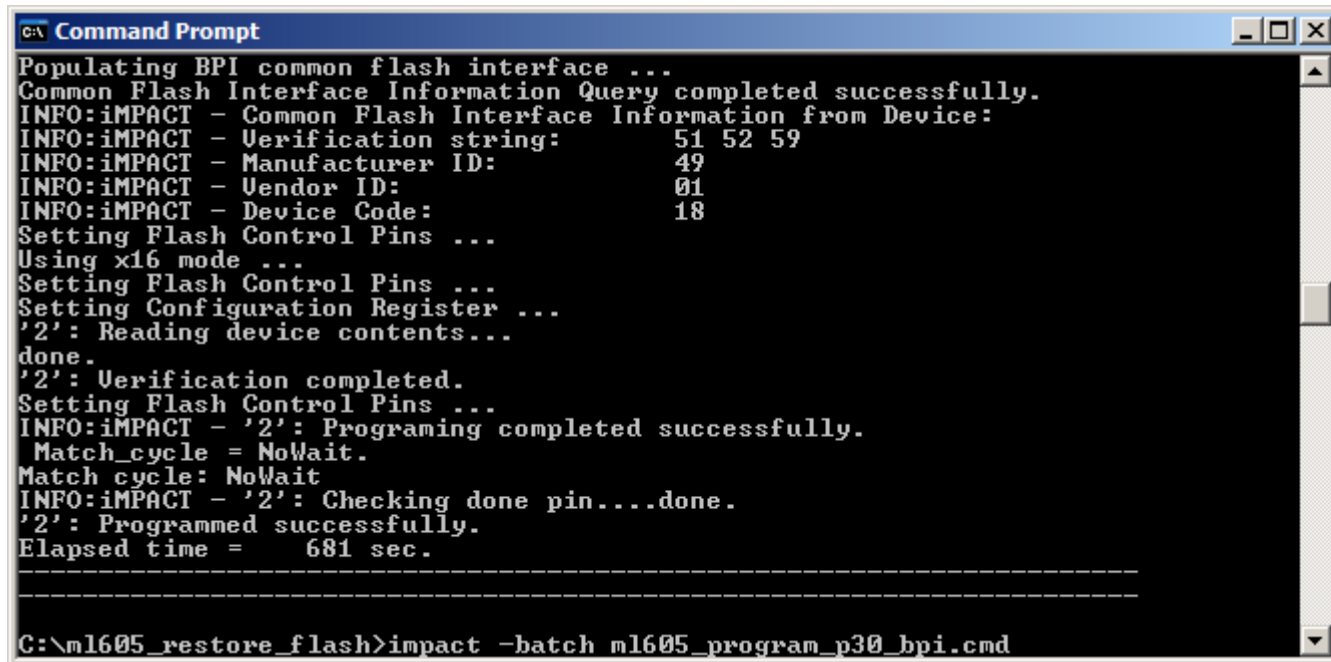
- **Set S2 to 001010 (1 = on, Position 6 → Position 1)**
 - This selects P30T BPI
 - Mode Switches set to BPI-Up
- **Set S1 to 0XXX (X = Don't care, Position 4 → Position 1)**
 - This disables JTAG configuration from the Compact Flash



Restoring ML605 Platform and P30T BPI Flash

- Program the BPI Flash

`impact -batch ml605_program_p30_bpi.cmd`



```
Command Prompt
Populating BPI common flash interface ...
Common Flash Interface Information Query completed successfully.
INFO:IMPACT - Common Flash Interface Information from Device:
INFO:IMPACT - Verification string:      51 52 59
INFO:IMPACT - Manufacturer ID:         49
INFO:IMPACT - Vendor ID:               01
INFO:IMPACT - Device Code:             18
Setting Flash Control Pins ...
Using x16 mode ...
Setting Flash Control Pins ...
Setting Configuration Register ...
'2': Reading device contents...
done.
'2': Verification completed.
Setting Flash Control Pins ...
INFO:IMPACT - '2': Programing completed successfully.
Match_cycle = NoWait.
Match cycle: NoWait
INFO:IMPACT - '2': Checking done pin....done.
'2': Programmed successfully.
Elapsed time =      681 sec.
-----
C:\ml605_restore_flash>impact -batch ml605_program_p30_bpi.cmd
```

Note: Takes about 50 minutes

Restoring ML605 Platform and P30T BPI Flash

- **After Restoring the flash, two designs are loaded in Flash**
 - BPI – Built-In Self Test (BIST)
 - See [XTP056](#) – ML605 BIST Flash Application for details
 - Platform Flash – PCIe x8 Gen1 Design
 - See [XTP044](#) – ML605 PCIe x8 Gen1 for details

References

References

- **Virtex-6 Configuration**

- Virtex-6 FPGA Configuration User Guide

http://www.xilinx.com/support/documentation/user_guides/ug360.pdf

Documentation

Documentation

- **Virtex-6**

- Virtex-6 FPGA Family

- <http://www.xilinx.com/products/virtex6/index.htm>

- **ML605 Documentation**

- Virtex-6 FPGA ML605 Evaluation Kit

- <http://www.xilinx.com/products/devkits/EK-V6-ML605-G.htm>

- ML605 Hardware User Guide

- http://www.xilinx.com/support/documentation/boards_and_kits/ug534.pdf

- ML605 Reference Design User Guide

- http://www.xilinx.com/support/documentation/boards_and_kits/ug535.pdf