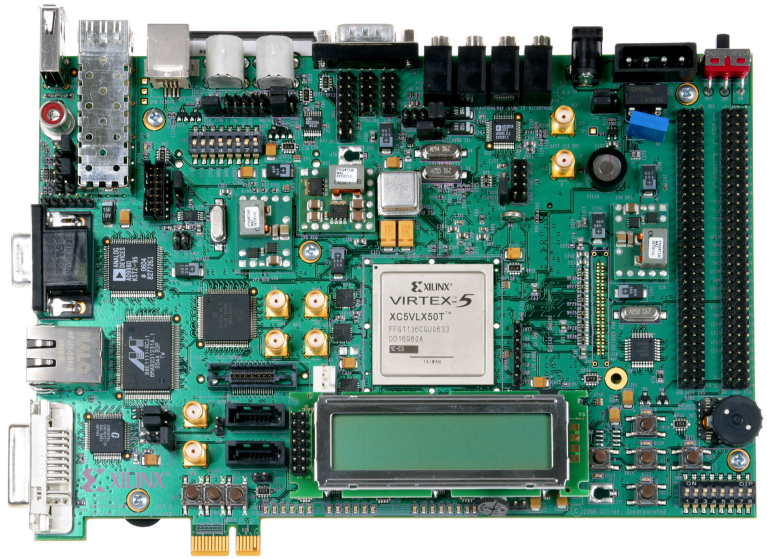
ML505/506 QuickStart



May 2008

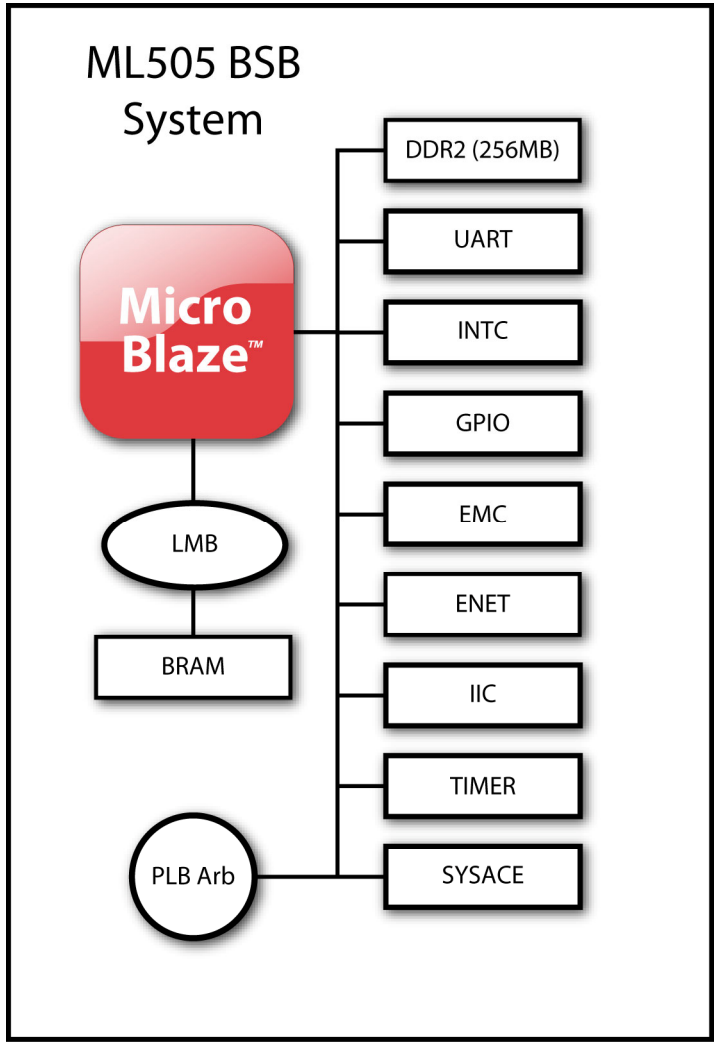
XILINX®

Overview

- Setup
- Boot with ACE-loader ACE File
- Observe LCD and Terminal messages
- Load new Configuration
- Re-load ACE-loader

ML505 BSB Hardware

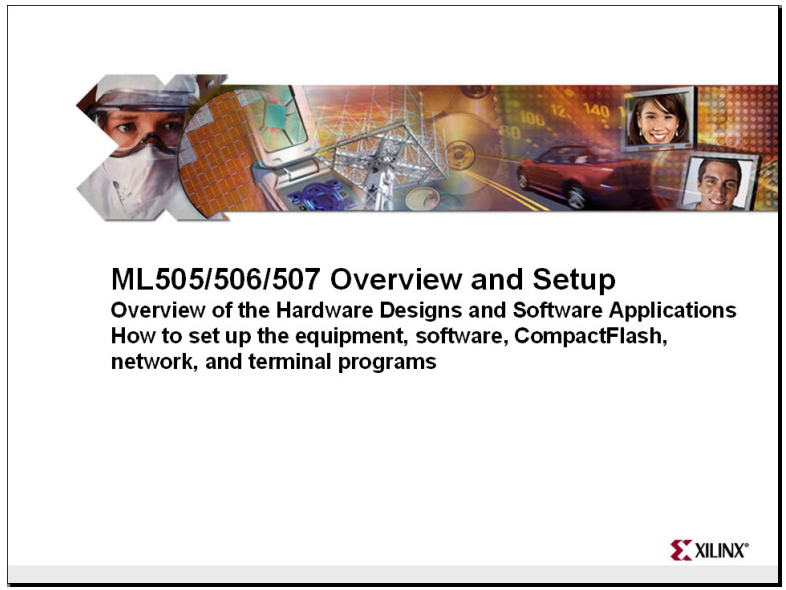
- The ML505 MicroBlaze design hardware includes:
  - DDR2 Interface (256 MB)
  - BRAM
  - External Memory Controller (EMC)
    - **ZBT SRAM**
  - Networking
  - UART
  - Interrupt Controller
  - System ACE CF Interface
  - GPIO (IIC, LEDs and LCD)
  - PLB Arbiter



Note: Presentation applies to the ML505 and ML506

Additional Setup Details

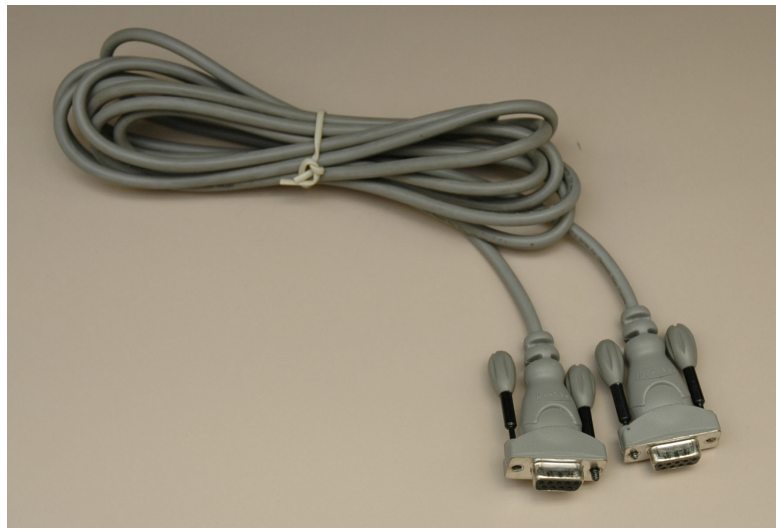
- Refer to ml505_overview_setup document for details on:
  - Software Requirements
  - ML505 Board Setup
    - **Equipment and Cables**
    - **Software**
    - **Network**
  - Terminal Programs
    - **This presentation requires the 9600-8-N-1 Baud terminal setup**



Hardware Setup

- Connect the Xilinx Parallel Cable IV (PC4) to the ML505 board

- Connect the RS232 null modem cable to the ML505 board



Hardware Setup

- The ML505 uses a DVI video interface
- Connect a DVI monitor

  or

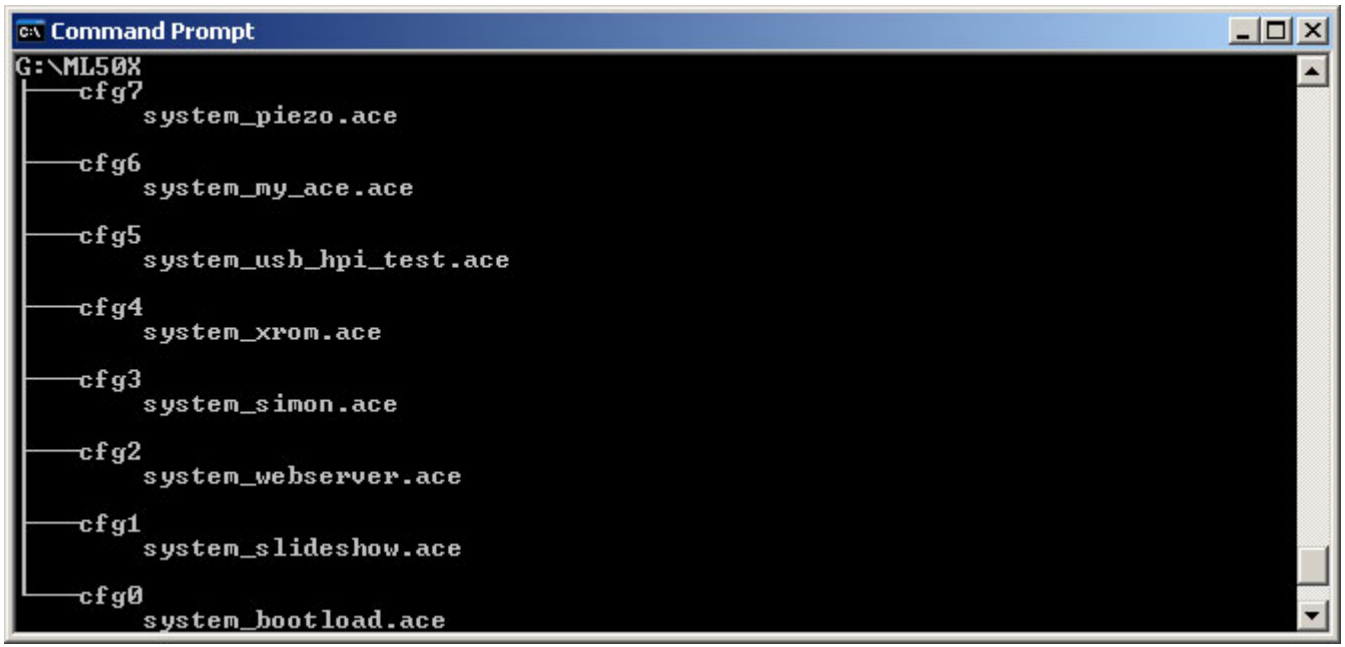
- Use a DVI/VGA adapter to connect a VGA monitor
  - http://www.belkin.com

Hardware Setup

- USB Keyboard
  - www.dell.com

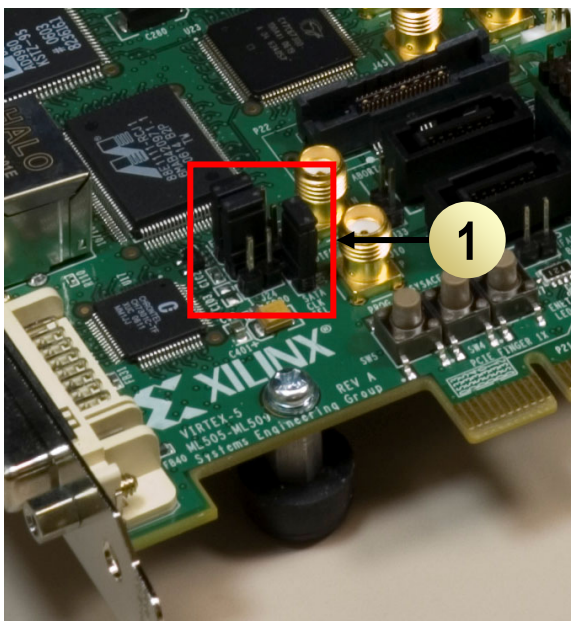
Factory CompactFlash

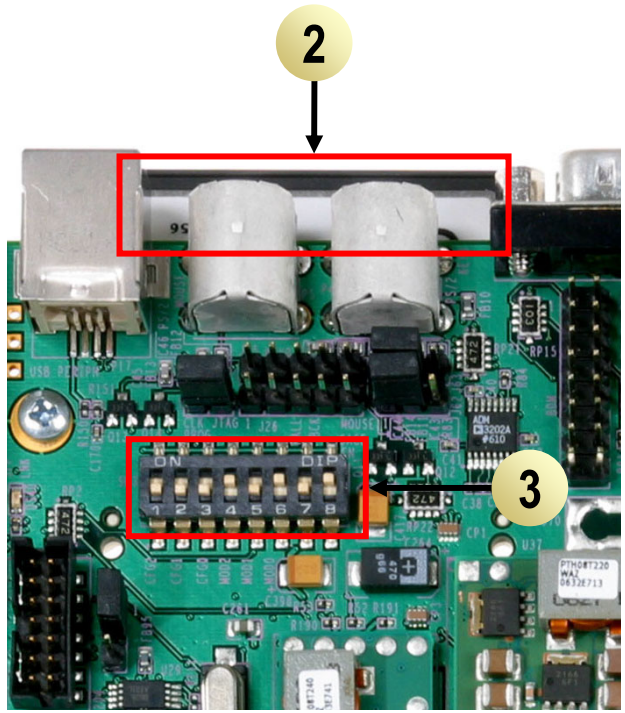
- The CompactFlash shipped with the ML505 board has the following ace files preloaded:



Verify Factory Default Settings

- Set the Ethernet PHY jumpers, J22, J23 to positions 1-2 (1)
- Insert the Factory CompactFlash into the ML505 board (2)
- Set the Front DIP switches (SW3) to 00010101 (1 = ON) (3)
- Set the Rear DIP switches (SW6) to 11001010 (4)
- Power-up the ML505 board

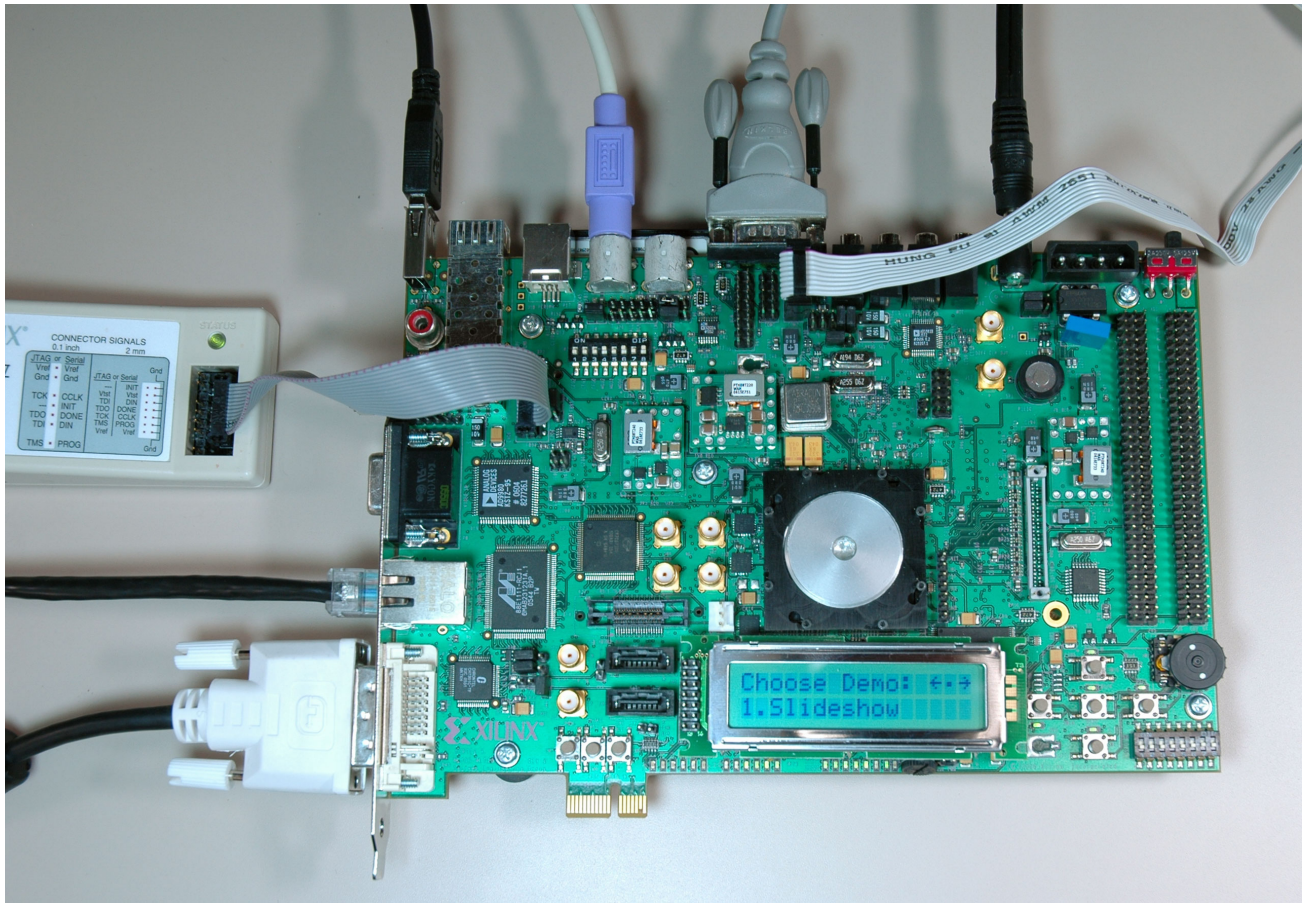




Note: Presentation applies to the ML505 and ML506

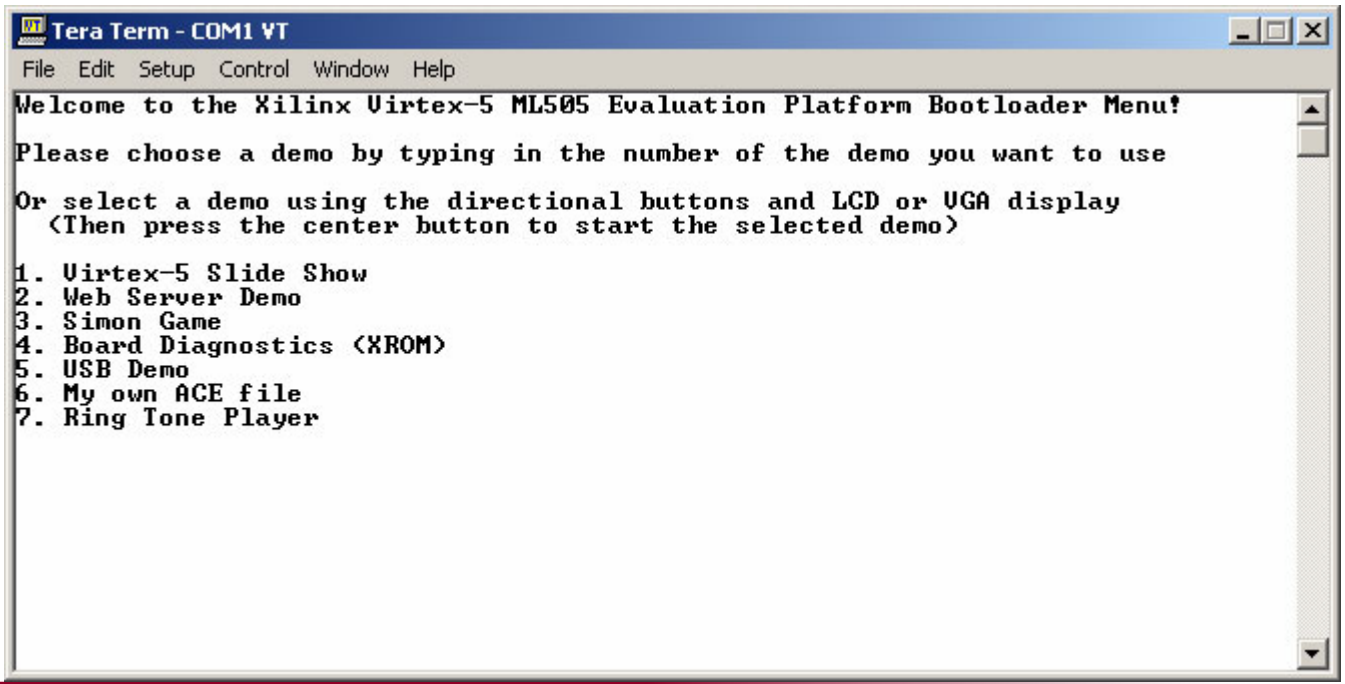
Bootload

- The system_bootload.ace loads:



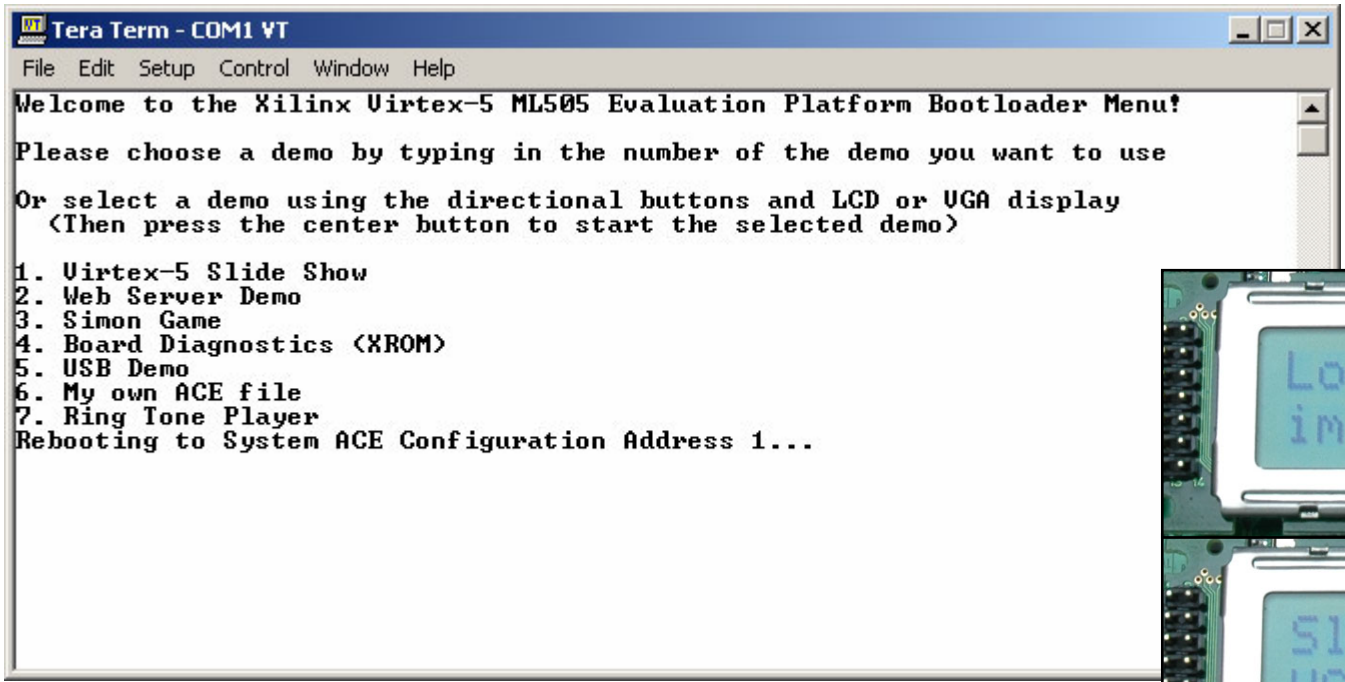
Bootload

- The terminal window also reflects the bootload application
- Use the left/center/right buttons to choose an application or type a number in the terminal window
- After each demo, push the SysACE reset to return to bootload



Slideshow

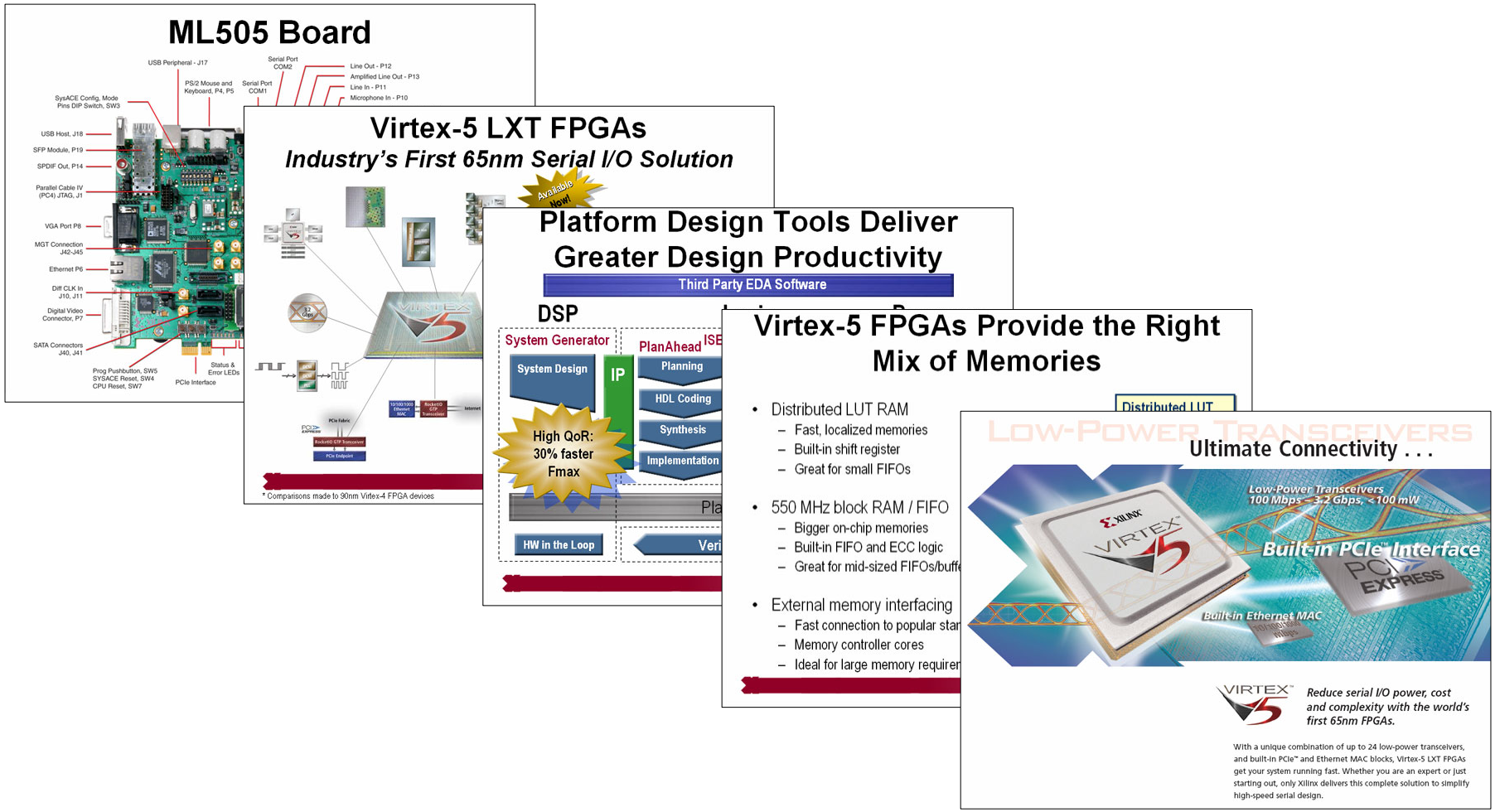
- Type 1, to launch the slideshow application in Configuration 1
- The slideshow loads the presentation into memory then presents it



Note: Presentation applies to the ML505 and ML506

Slideshow

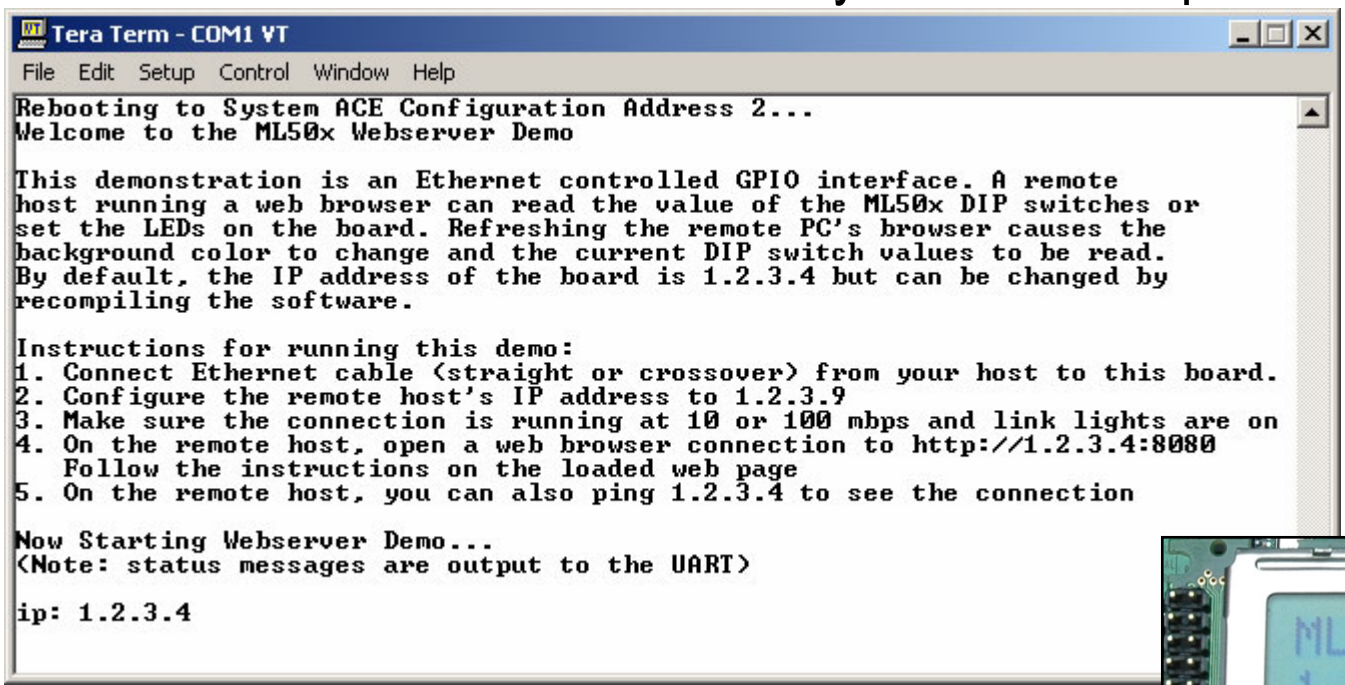
- The slideshow app will present a series of slides on the Monitor:



Note: Presentation applies to the ML505 and ML506

Web Server

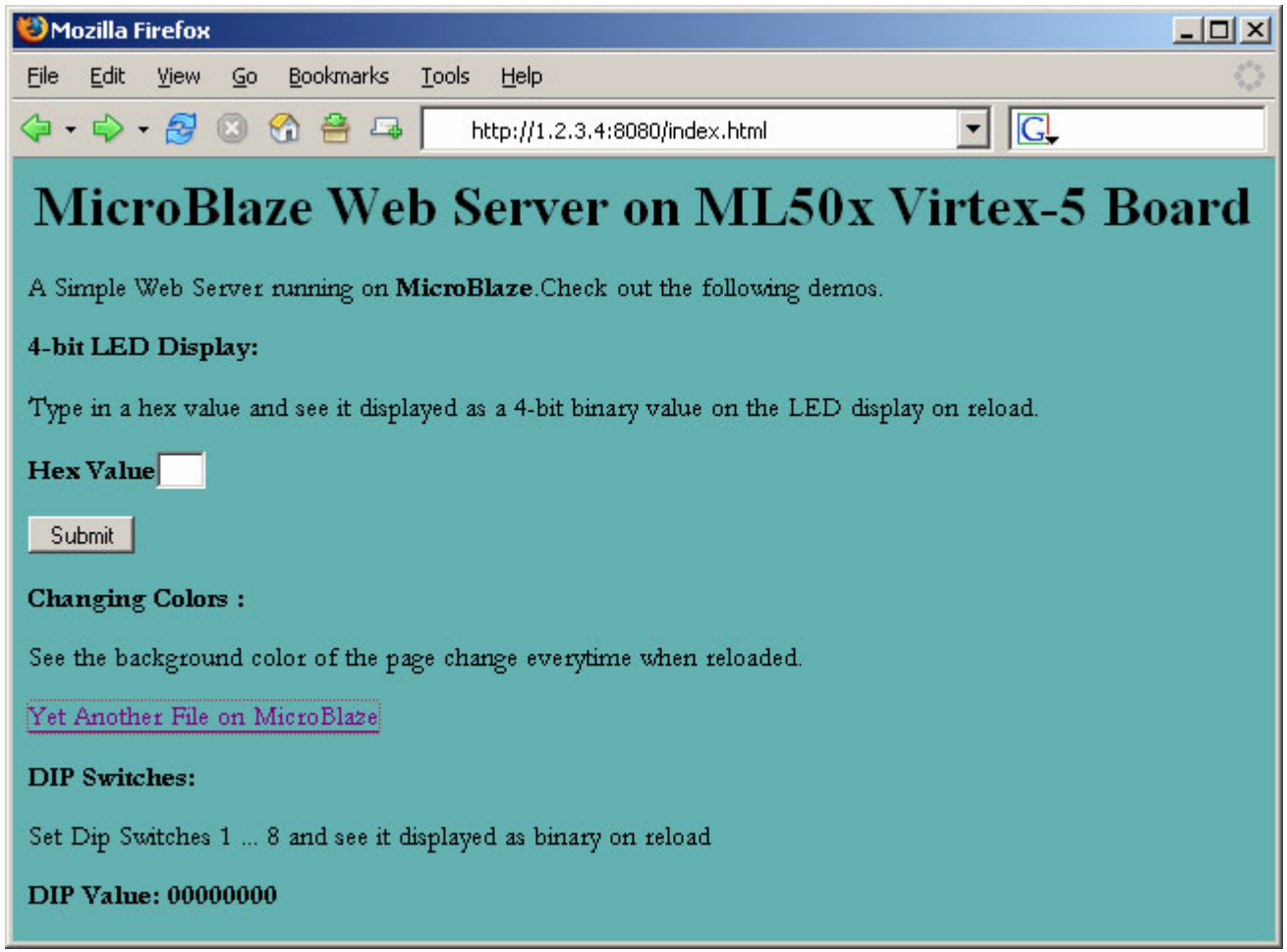
- Type 2, to launch the web server application in Configuration 2
  - **Note**: You may need to turn off your browser's proxy and specify a direct connection to the Internet in your browser options



Note: Host IP is 1.2.3.9, subnet mask is 255.0.0.0; Ethernet connection is 100 Full Duplex

Web Server

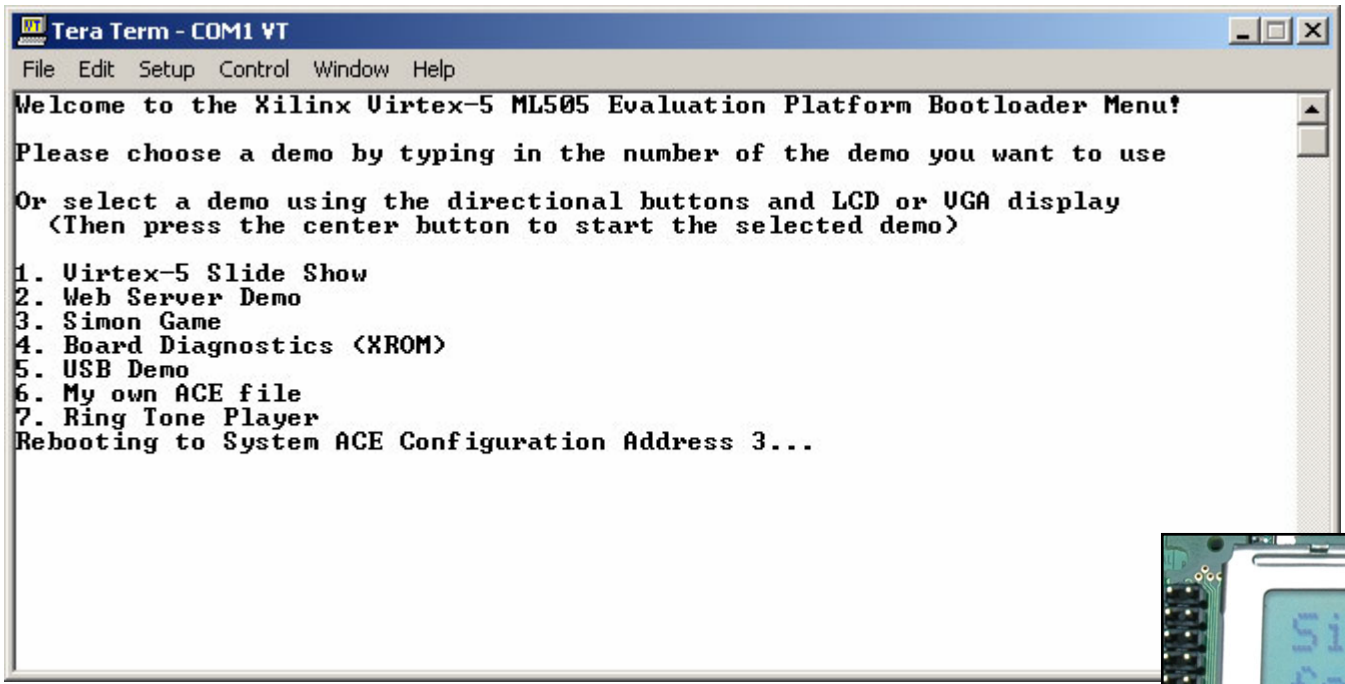
- In your web browser, enter http://1.2.3.4:8080/index.html



Note: Presentation applies to the ML505 and ML506

Simon

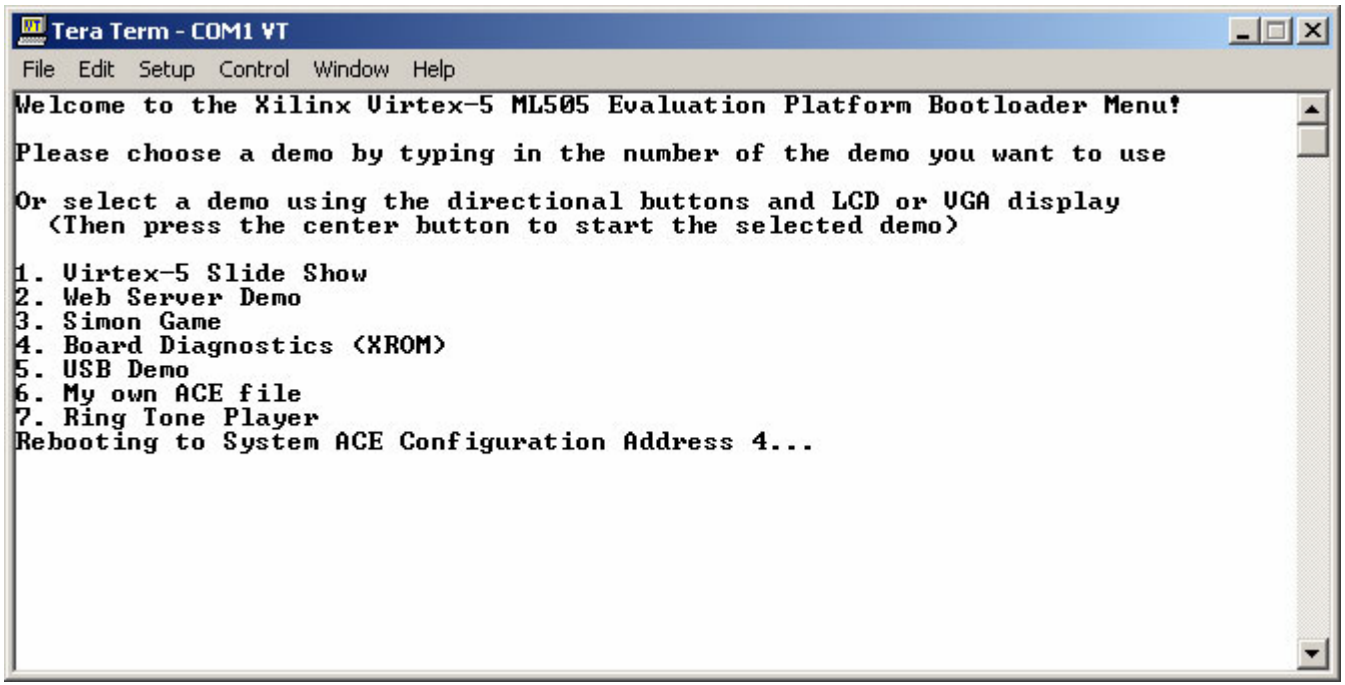
- Type 3, to launch the Simon application in Configuration 3



Note: Presentation applies to the ML505 and ML506

Board Diagnostics

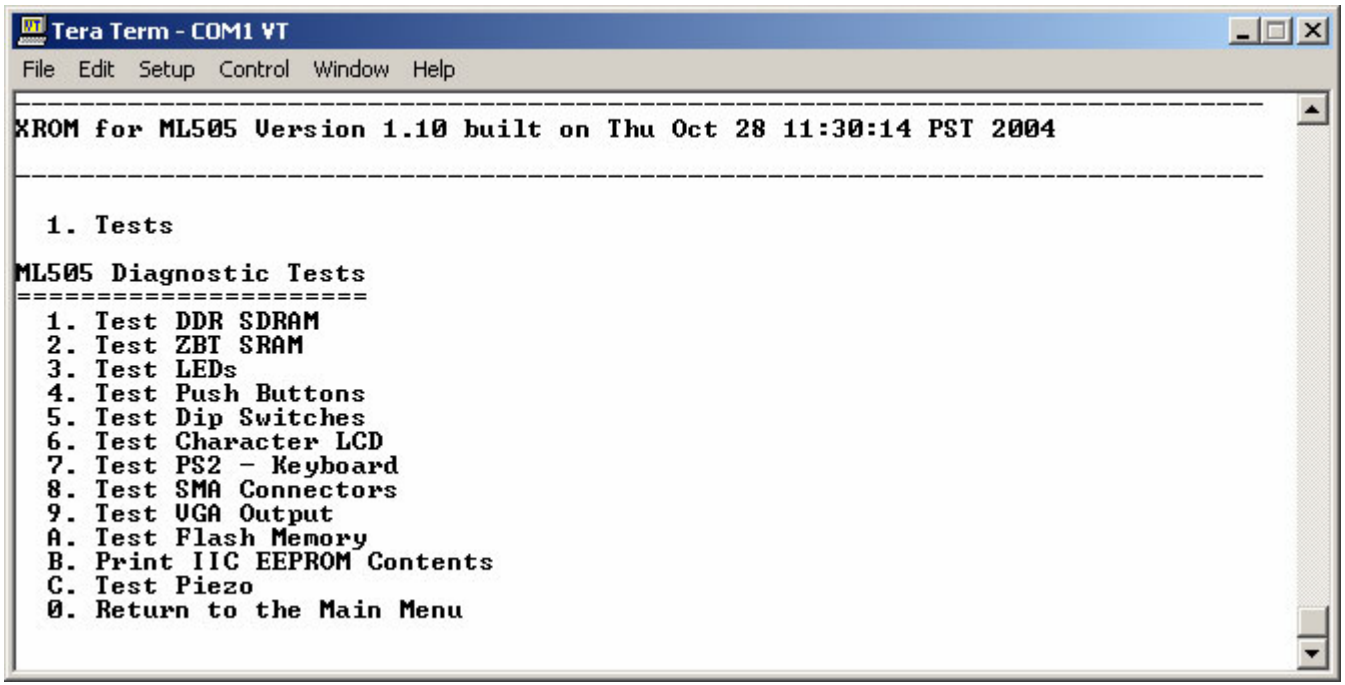
- Type 4, to launch the XROM application in Configuration 4



Note: Presentation applies to the ML505 and ML506

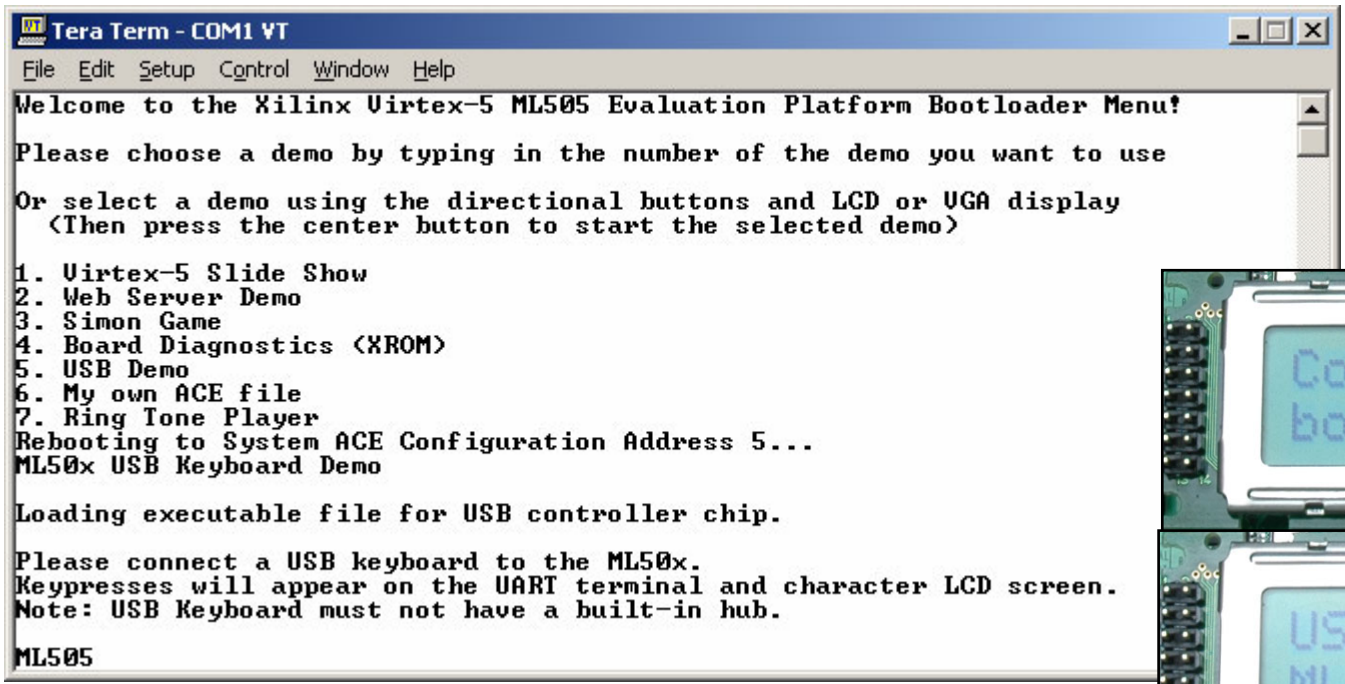
Board Diagnostics

- XROM includes a series of board test routines



USB Keyboard

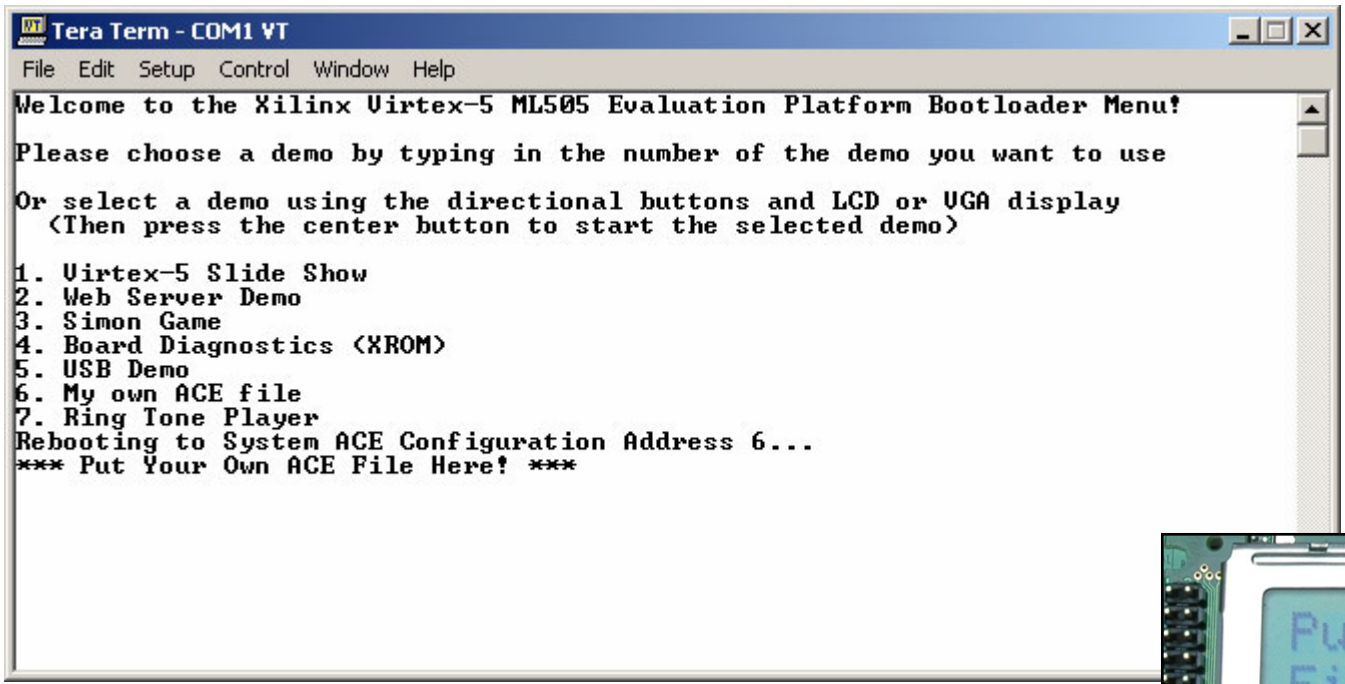
- Type 5, to launch the USB Keyboard application in Configuration 5
- Type **ML505** and view results:



Note: Presentation applies to the ML505 and ML506

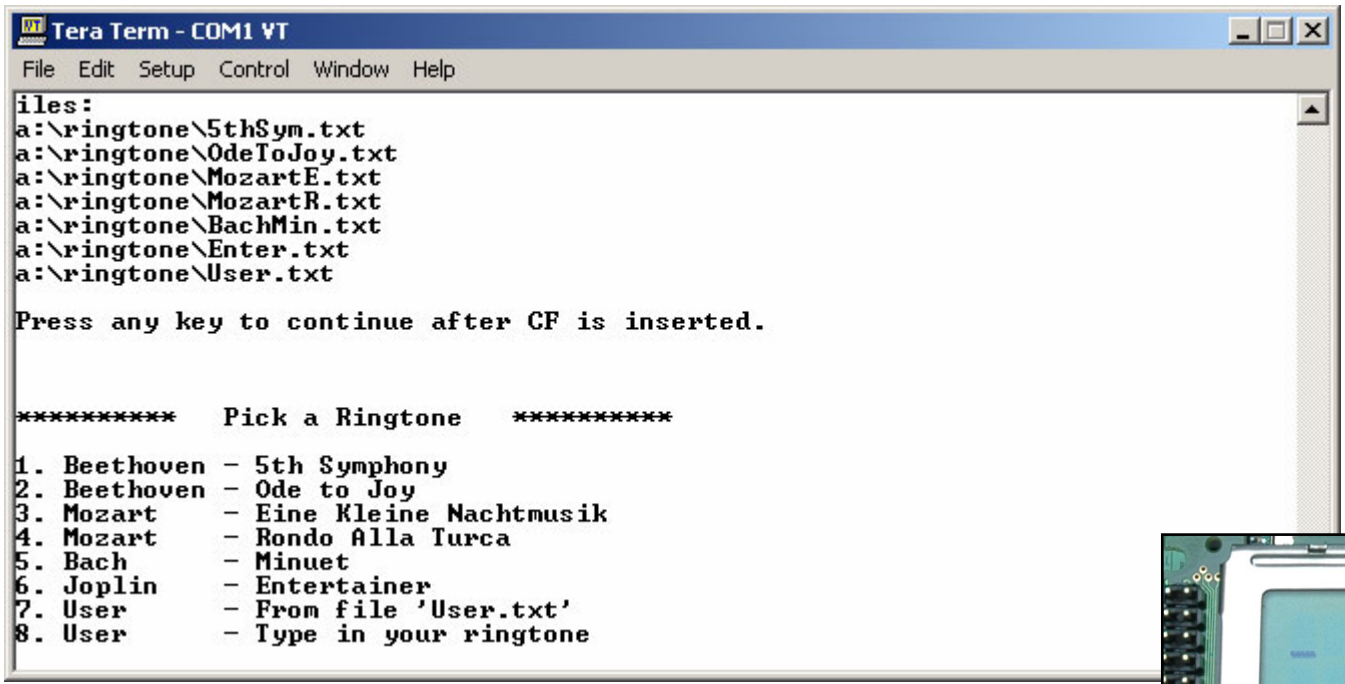
My ACE

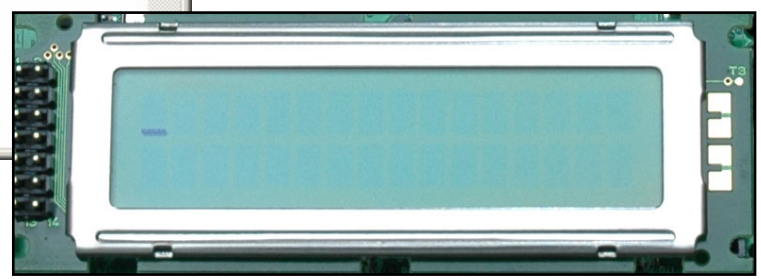
- Type 6, to launch the My ACE application in Configuration 6



Ringtone

- Type 7, to launch the Ringtone application in Configuration 7
- Press any key then press 1-7 to play a simple melody





Documentation

- Virtex-5
  - Silicon Devices
    http://www.xilinx.com/products/silicon_solutions
  - Virtex-5 Multi-Platform FPGA
    http://www.xilinx.com/products/silicon_solutions/fpgas/virtex/virtex5
  - Virtex-5 Family Overview: LX, LXT, SXT, and FXT Platforms
    http://www.xilinx.com/support/documentation/data_sheets/ds100.pdf
  - Virtex-5 FPGA DC and Switching Characteristics Data Sheet
    http://www.xilinx.com/support/documentation/data_sheets/ds202.pdf

Documentation

- Virtex-5
  - Virtex-5 FPGA User Guide
    http://www.xilinx.com/support/documentation/user_guides/ug190.pdf
  - Virtex-5 FPGA Configuration User Guide
    http://www.xilinx.com/support/documentation/user_guides/ug191.pdf
  - Virtex-5 System Monitor User Guide
    http://www.xilinx.com/support/documentation/user_guides/ug192.pdf
  - Virtex-5 Packaging and Pinout Specification
    http://www.xilinx.com/support/documentation/user_guides/ug195.pdf

Documentation

- Virtex-5 RocketIO
  - RocketIO GTP Transceivers

    http://www.xilinx.com/products/silicon_solutions/fpgas/virtex/virtex5/capabilities/RocketIO_GTP.htm
  - RocketIO GTX Transceivers

    http://www.xilinx.com/products/silicon_solutions/fpgas/virtex/virtex5/capabilities/RocketIO_GTX.htm
  - RocketIO GTP Transceiver User Guide – UG196

    http://www.xilinx.com/support/documentation/user_guides/ug196.pdf
  - RocketIO GTX Transceiver User Guide – UG198

    http://www.xilinx.com/support/documentation/user_guides/ug198.pdf

Documentation

- MicroBlaze
  - MicroBlaze Processor
    http://www.xilinx.com/microblaze
  - MicroBlaze Processor Reference Guide – UG081
    http://www.xilinx.com/support/documentation/sw_manuals/mb_ref_guide.pdf

Documentation

- Memory Solutions
  - Demos on Demand – Memory Interface Solutions with Xilinx FPGAs
    http://www.demosondemand.com/clients/xilinx/001/page_new2/index.asp#35
  - Xilinx Memory Corner
    http://www.xilinx.com/products/design_resources/mem_corner
  - Additional Memory Resources
    http://www.xilinx.com/support/software/memory/protected/index.htm
  - Xilinx Memory Interface Generator (MIG) 2.1 User Guide
    http://www.xilinx.com/support/software/memory/protected/ug086.pdf
  - Memory Interfaces Made Easy with Xilinx FPGAs and the Memory Interface Generator
    http://www.xilinx.com/support/documentation/white_papers/wp260.pdf

Documentation

- Ethernet
  - Virtex-5 Embedded Tri-Mode Ethernet MAC Wrapper Data Sheet
    http://www.xilinx.com/support/documentation/ip_documentation/v5_emac_ds550.pdf
  - Virtex-5 Embedded Tri-Mode Ethernet MAC Wrapper Getting Started Guide
    http://www.xilinx.com/support/documentation/ip_documentation/v5_emac_gsg340.pdf
  - Virtex-5 Tri-Mode Ethernet Media Access Controller User Guide
    http://www.xilinx.com/support/documentation/user_guides/ug194.pdf
  - LightWeight IP (lwIP) Application Examples – XAPP1026
    http://www.xilinx.com/support/documentation/application_notes/xapp1026.pdf

Documentation

- ML505/506/507
  - ML505 Overview
    http://www.xilinx.com/ml505
  - ML506 Overview
    http://www.xilinx.com/ml506
  - ML507 Overview
    http://www.xilinx.com/ml507
  - ML505/506/507 Evaluation Platform User Guide – UG347
    http://www.xilinx.com/support/documentation/boards_and_kits/ug347.pdf
  - ML505/506/507 Getting Started Tutorial – UG348
    http://www.xilinx.com/support/documentation/boards_and_kits/ug348.pdf
  - ML505/506/507 Reference Design User Guide – UG349
    http://www.xilinx.com/support/documentation/boards_and_kits/ug349.pdf

Documentation

- ML505/506/507
  - ML505/506/507 Schematics

    http://www.xilinx.com/support/documentation/boards_and_kits/ml50x_schematics.pdf
  - ML505/506/507 Bill of Material

    http://www.xilinx.com/support/documentation/boards_and_kits/ml505_501_bom.xls