SOHO GUI training

Version 0.1

10-4-2009

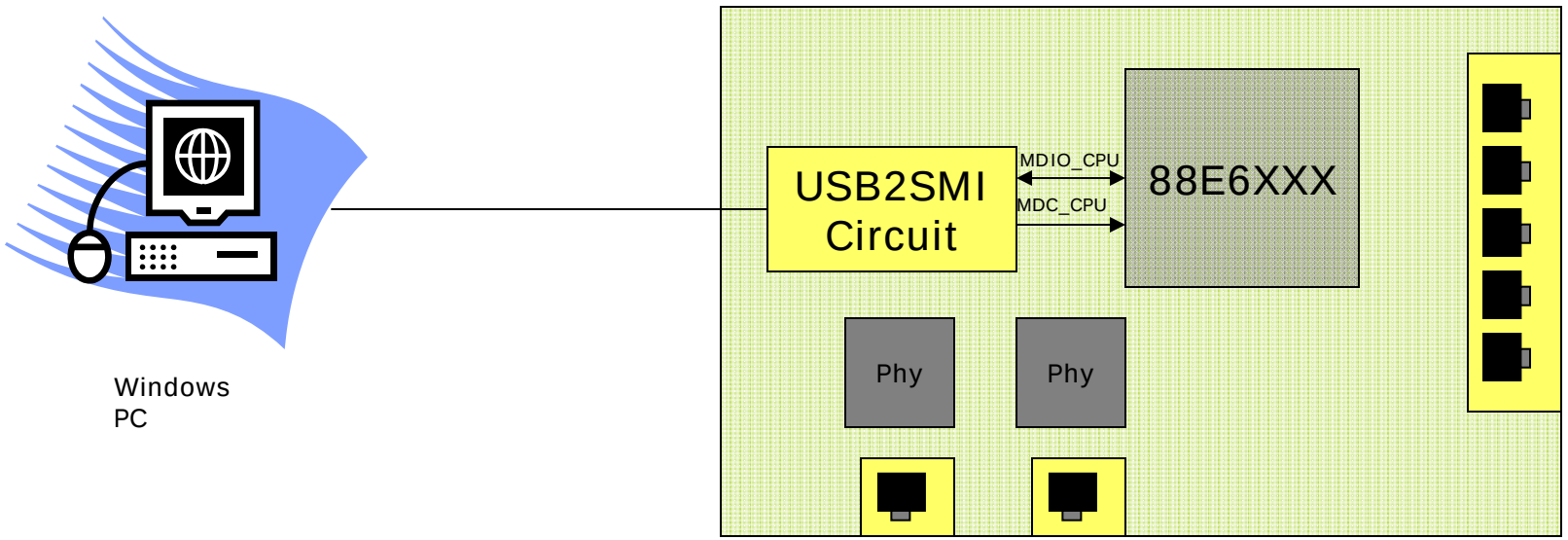
Agenda

- Overview of new features
- Switch GUI usage Cases
- SWITCH GUI Installation
- Switch GUI overview

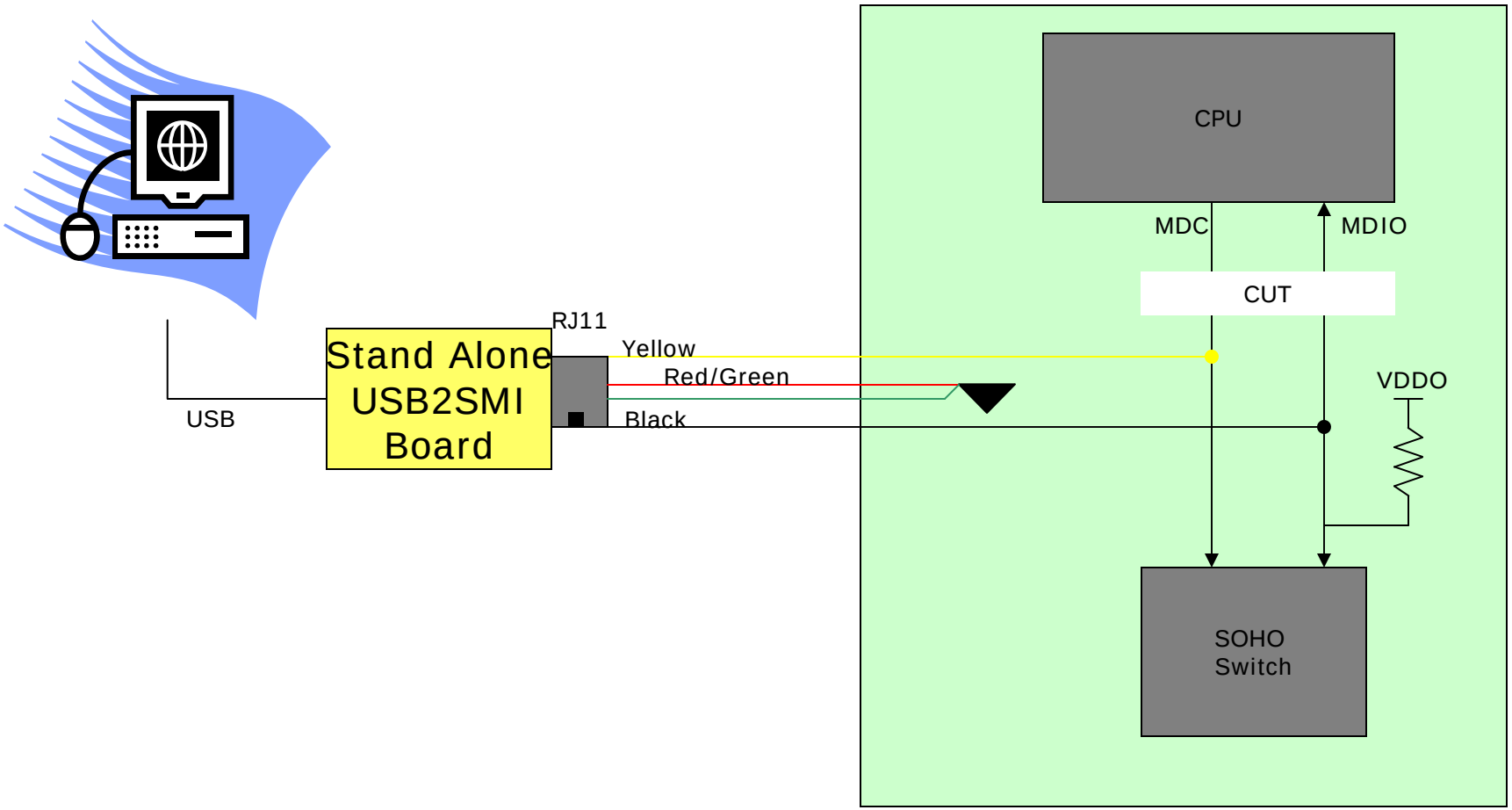
New Features in GUI

- **Supports Multiple Instances**
- **Enhanced script capturing capabilities**
  - Creates EEPROM file
  - Creates CLI script
- **Command Line Interface**
  - Register Read and Write can be done on a DOS type CLI
- **Register Dump**
  - Dumps all switch registers to an Excel Style Table
- **Dec/Bin/Hex Data Access**

Marvell GUI Usage Case 1 Marvell Development Board with on-board USB2SMI adaptor



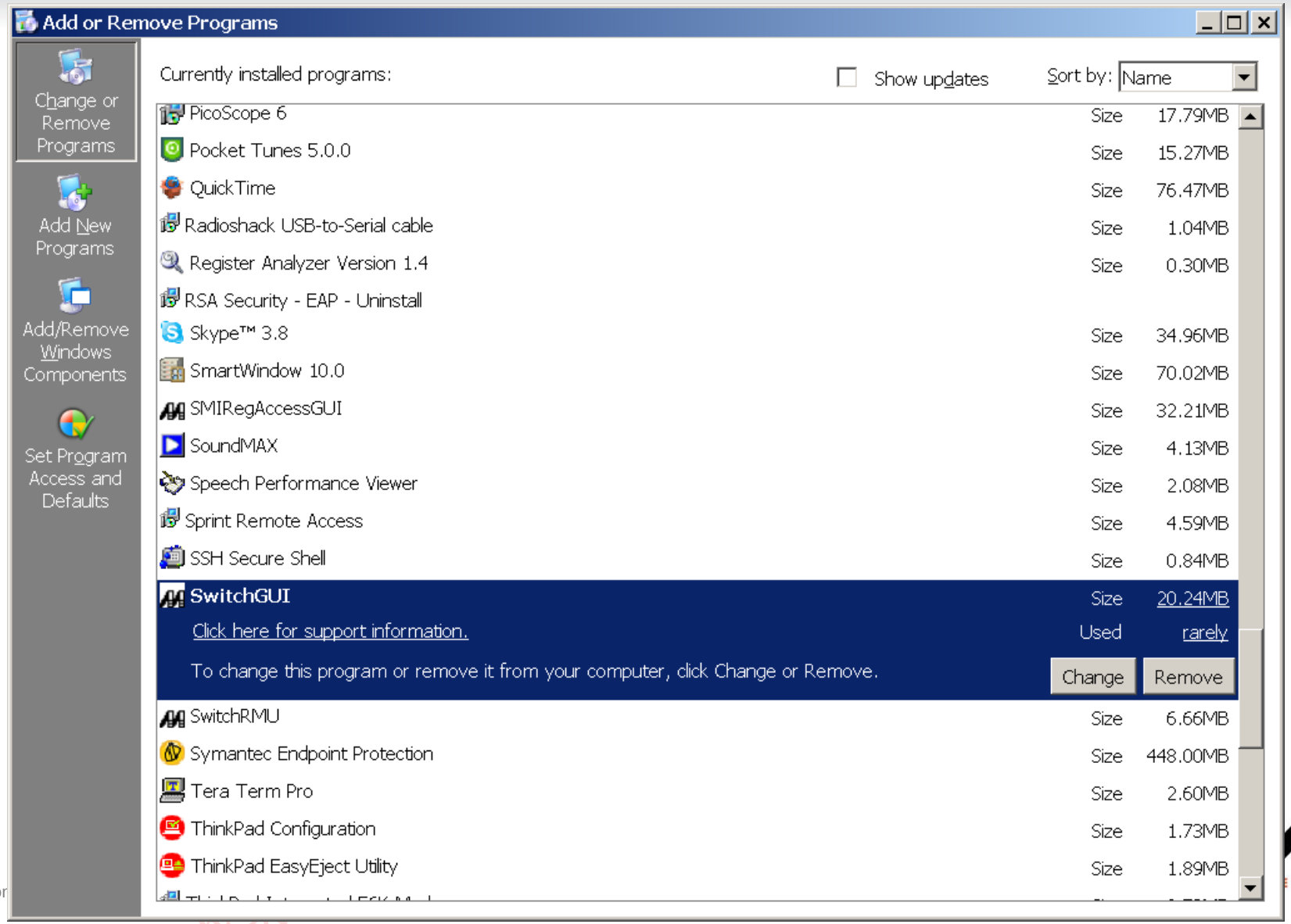
Marvell GUI Usage Case 2 Customer Board using USB2SMI adaptor



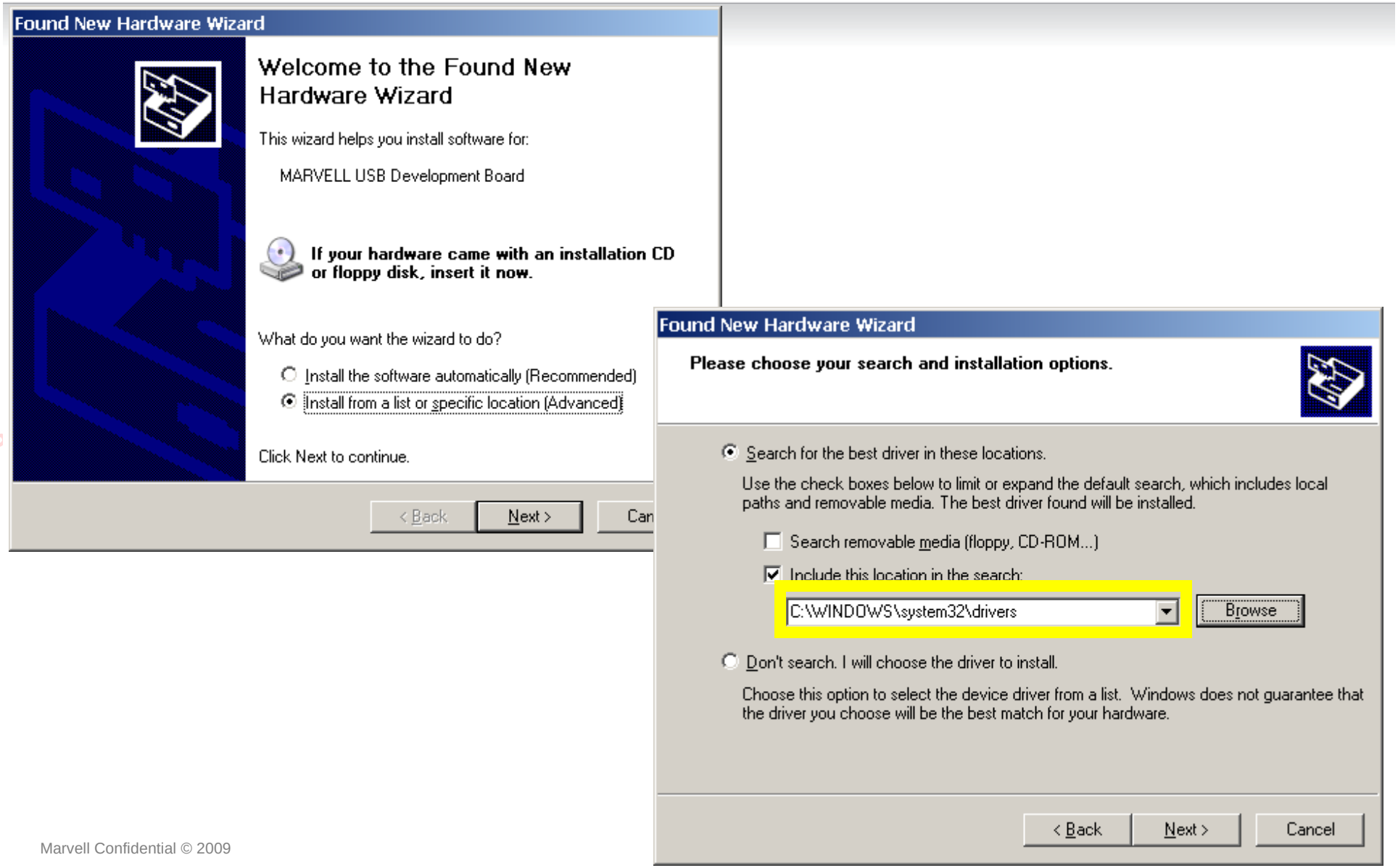
Marvell GUI installation

- **Before installing a new version of Switch GUI Uninstall old GUI via Add/Remove Programs**
- **Where to get software**
  - My Products > Switching > Link Street SOHO Switch Family > Gigabit Ethernet Switches > [Any Product] > **Development Boards** > GUI Software for SOHO Products
- **This requires the installation of the Microsoft .net framework which will be installed automatically if not already installed**
- **Plug USB cable into Marvell development board**
- **Install Driver**

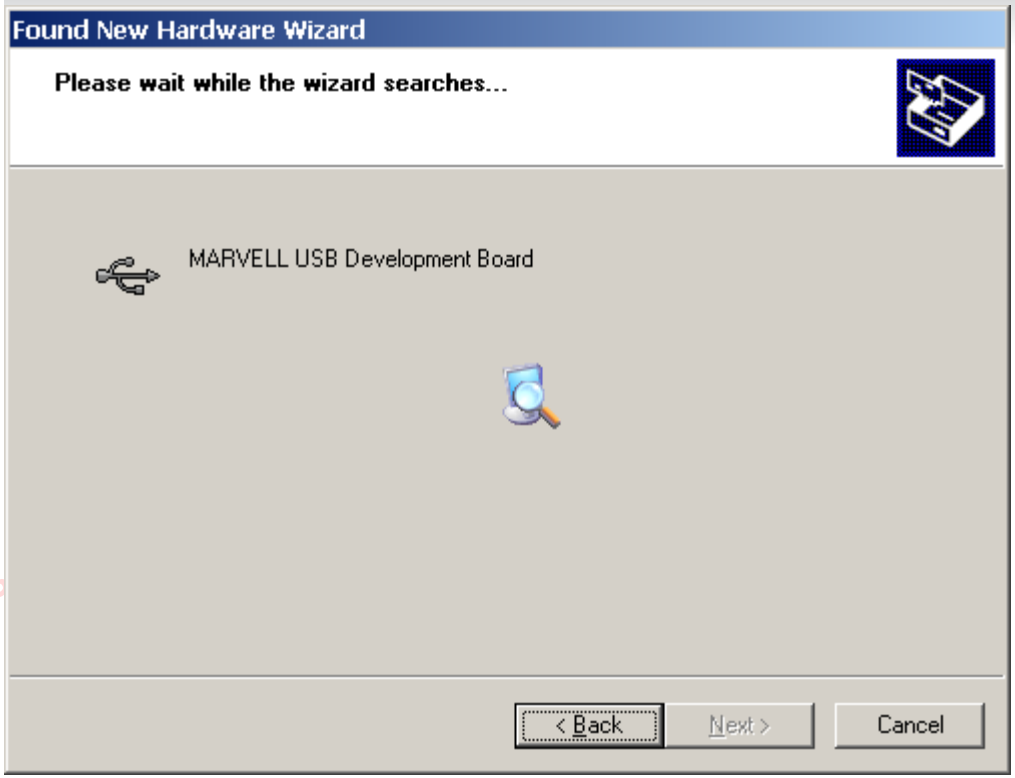
Un-Install Old version Before installing new version

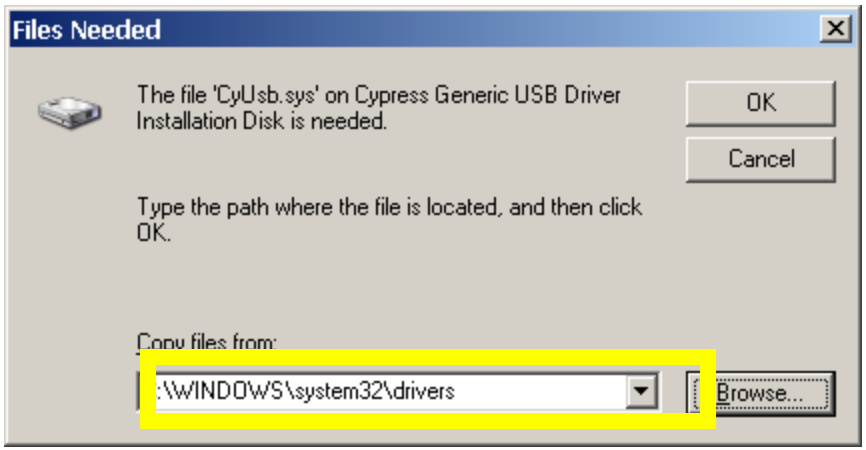


Installing Driver for Marvell Development Board 1

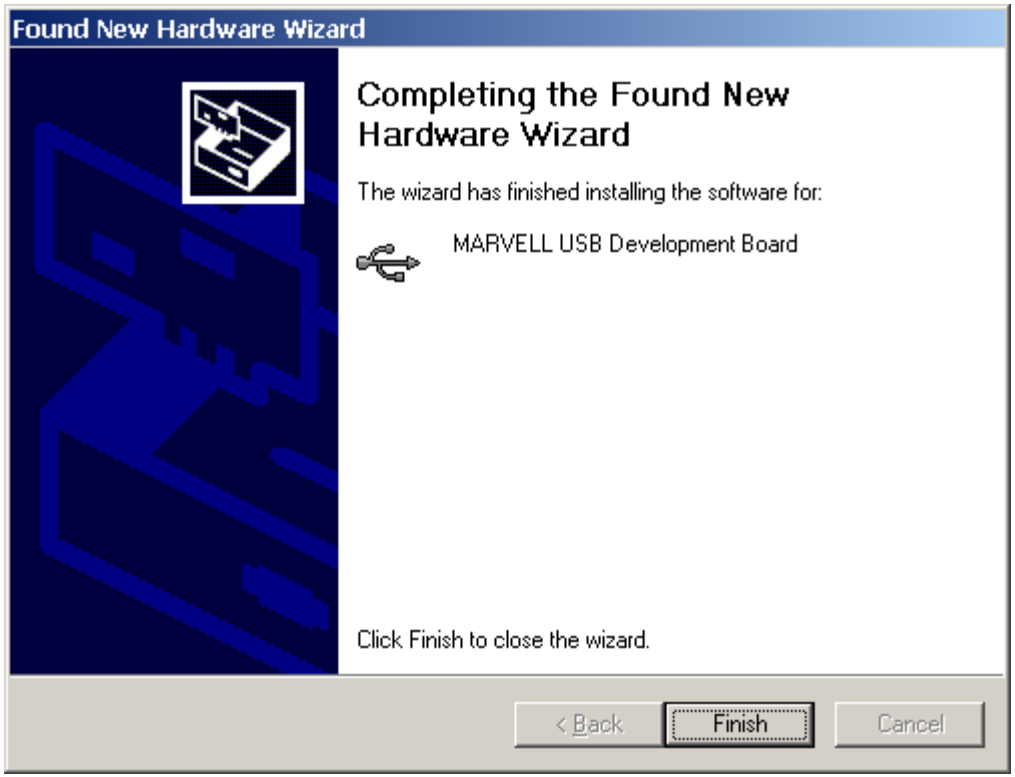


Installing Driver for Marvell Development Board 2





Installing Driver for Marvell Development Board 3



- **After clicking Finish, Windows should indicate new Hardware is ready to use**

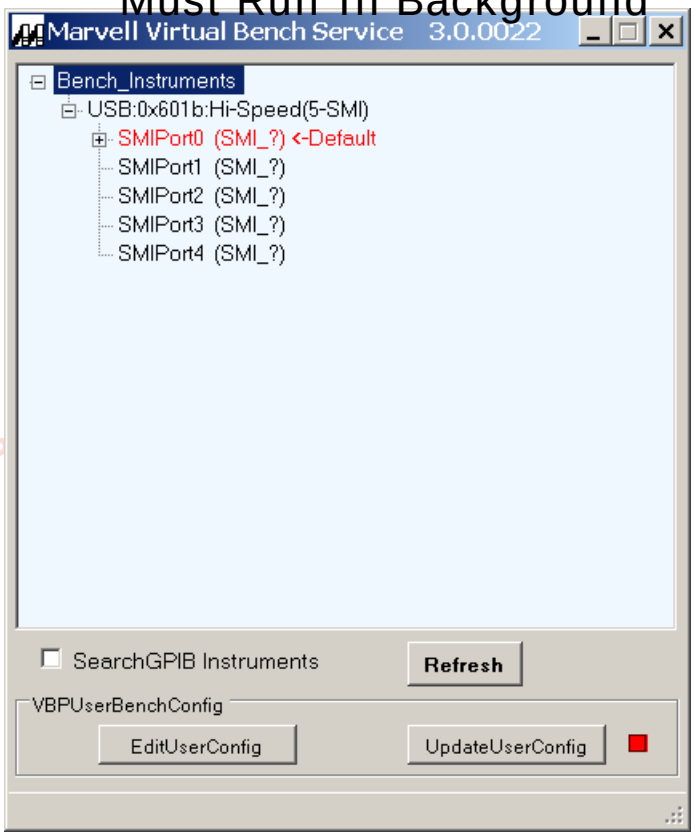
Cleaning Up Driver entries in Registry

C:\Program Files\Marvell\SwitchGUI\CleanReg.vbs

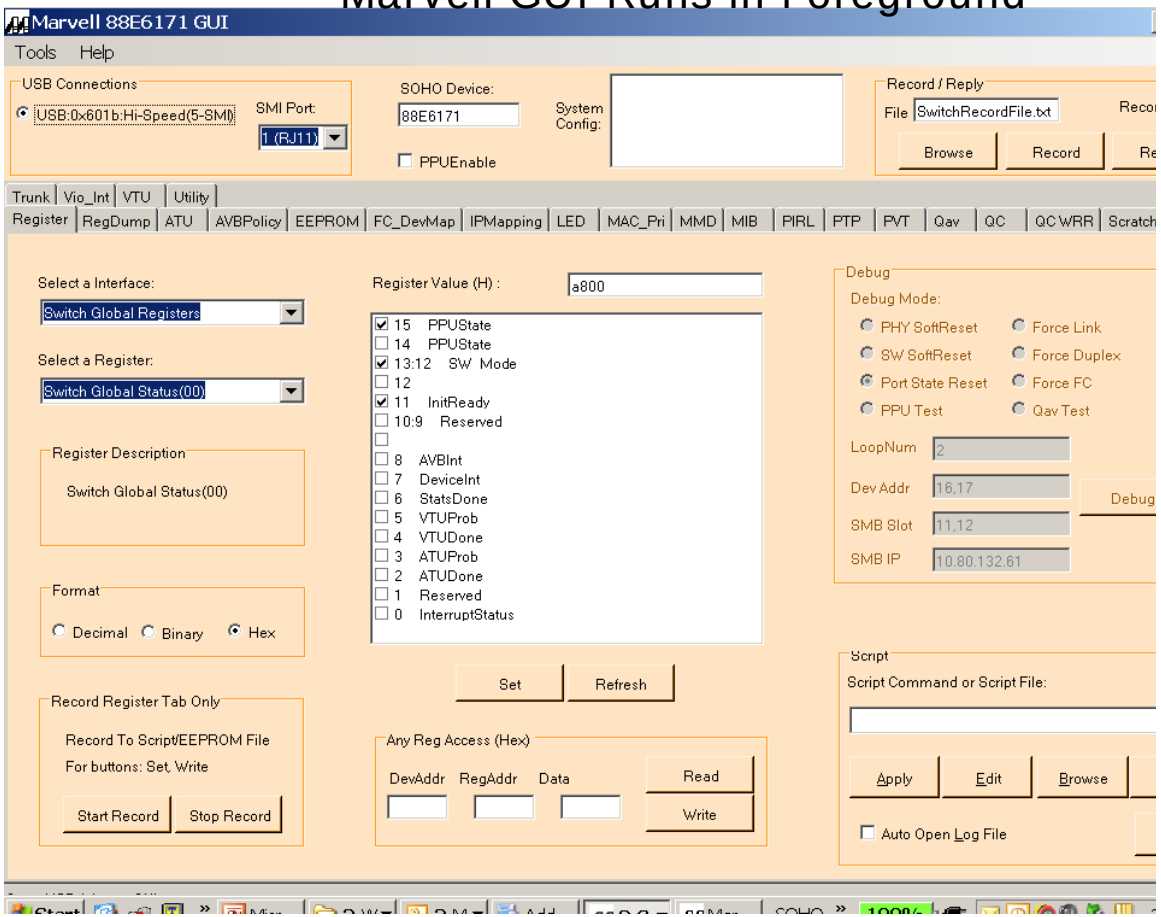
Do this only if you have trouble with Driver

Starting Marvell GUI
C:\Program Files\Marvell\SwitchGUI\SwitchGUI.exe

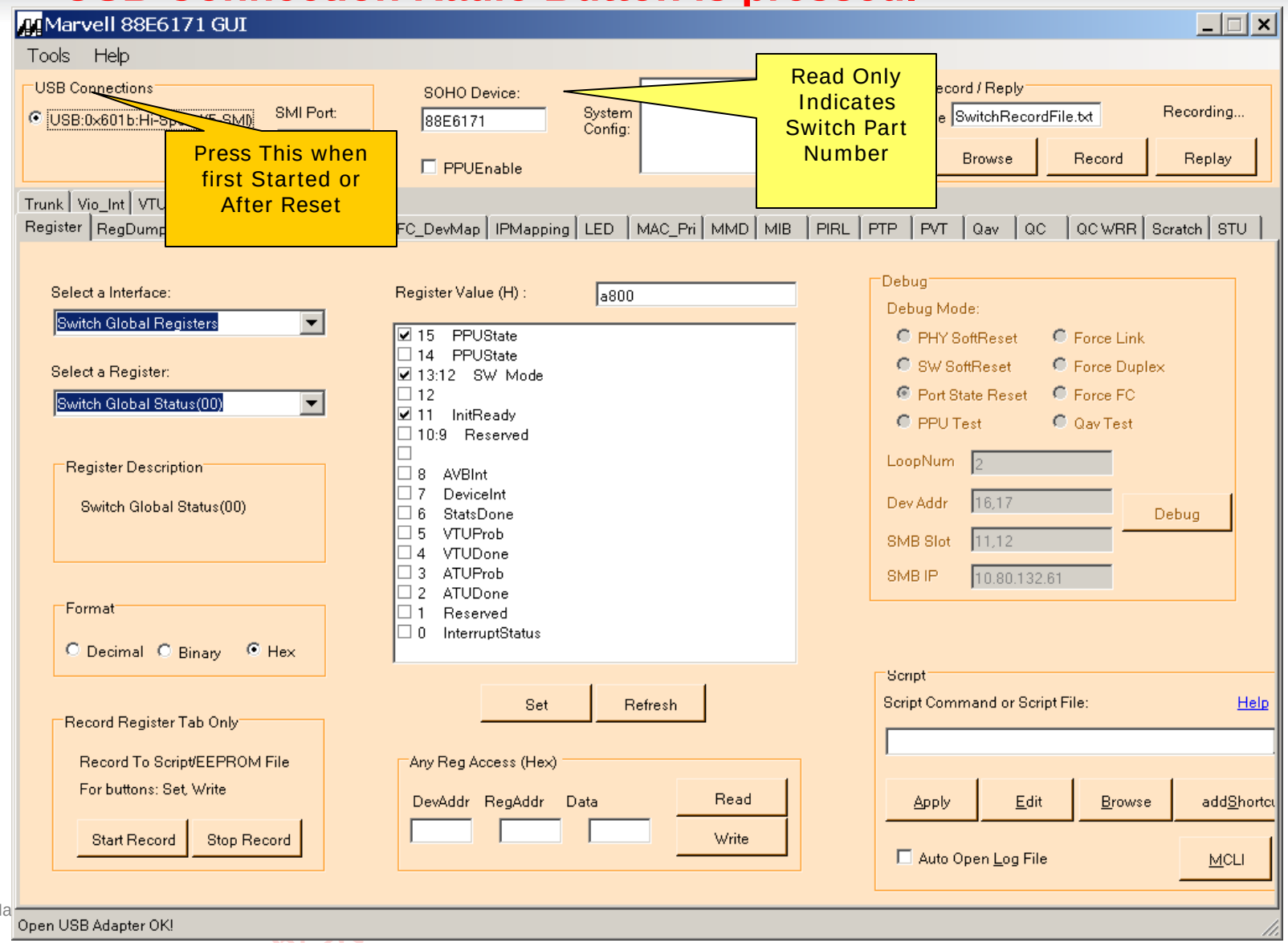
Marvell Virtual Bench Service
Must Run In Background



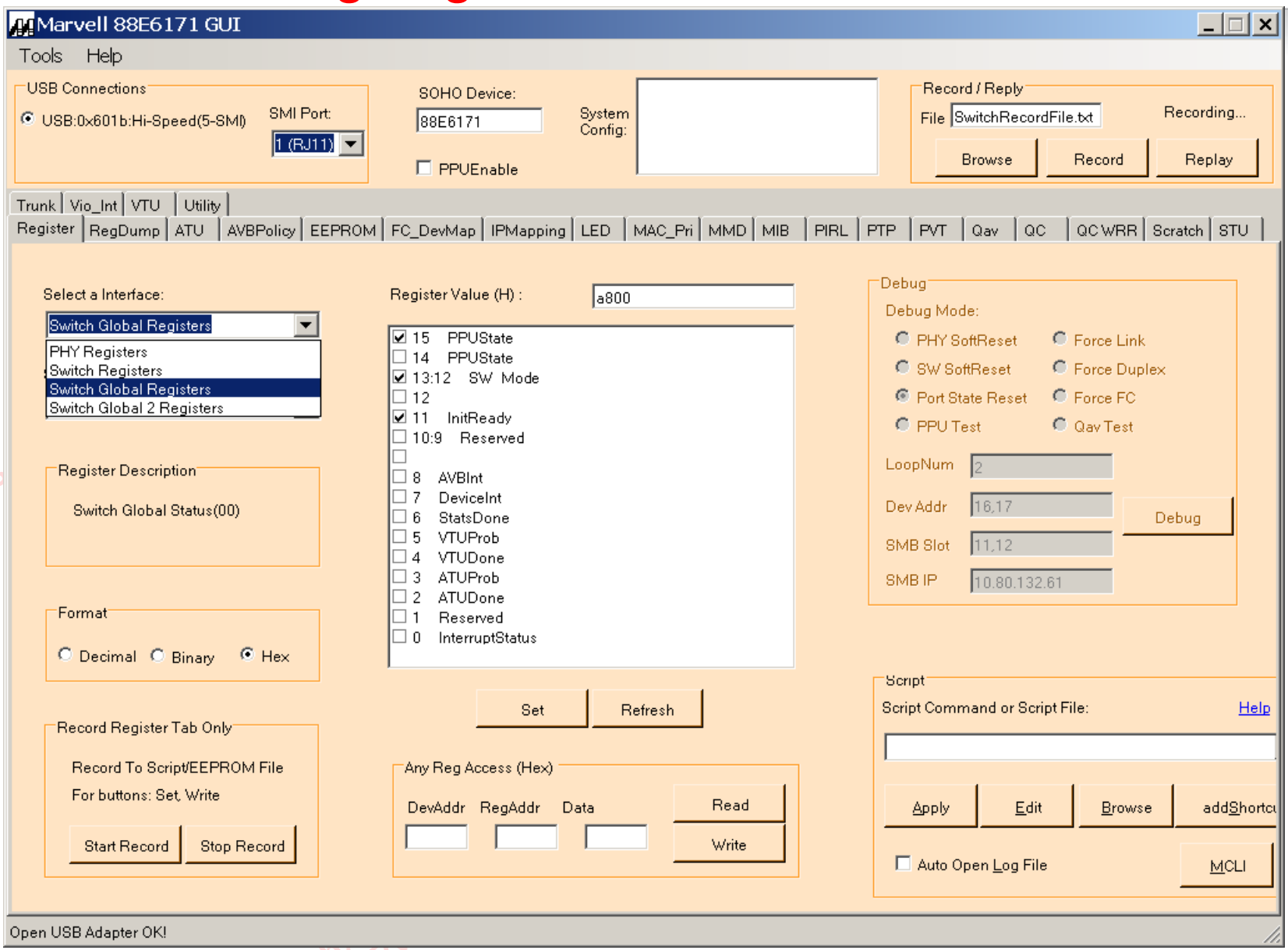
Marvell GUI Runs in Foreground



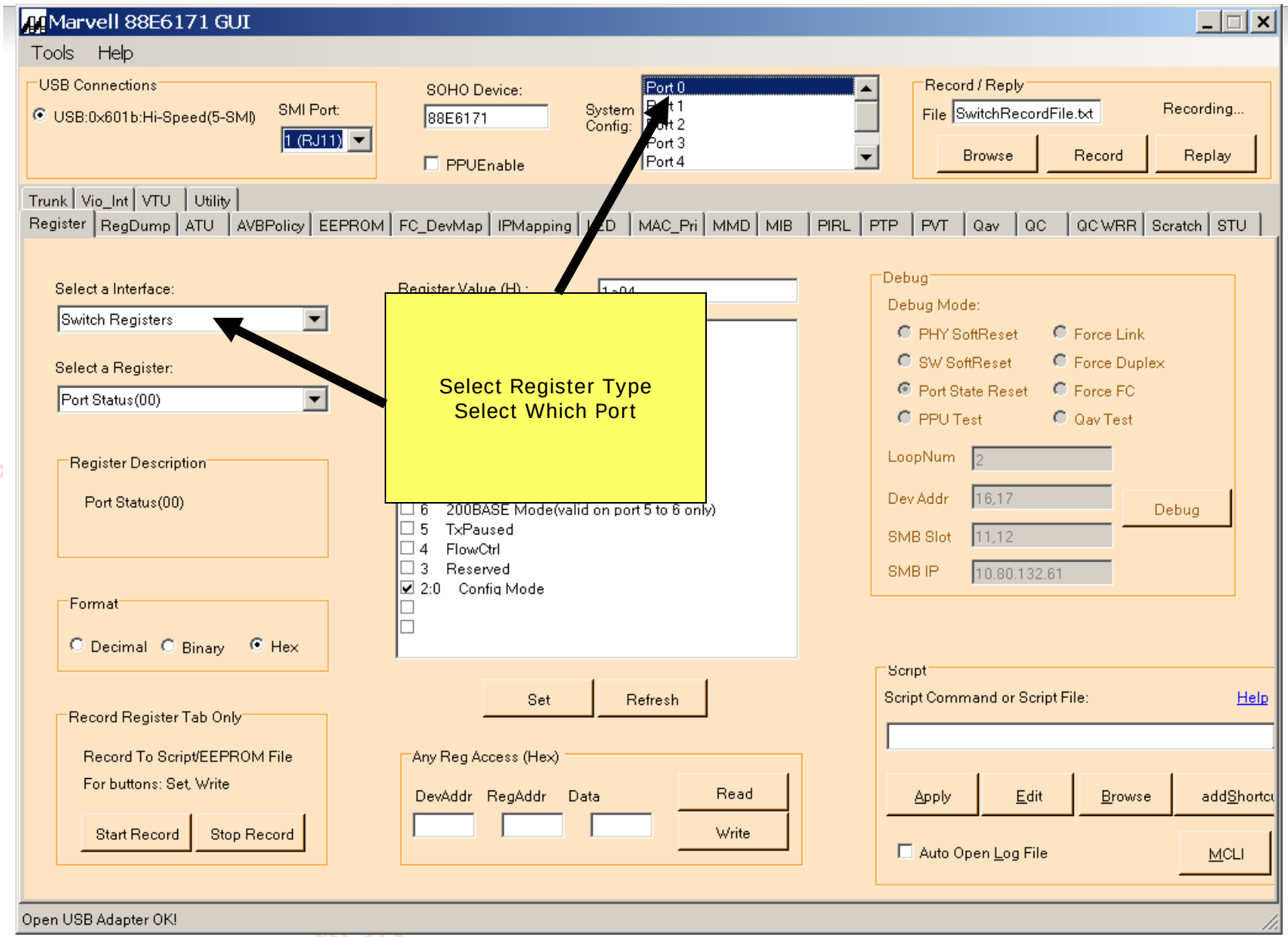
After GUI opens properly… Board will not be displayed until USB Connection Radio Button is pressed.



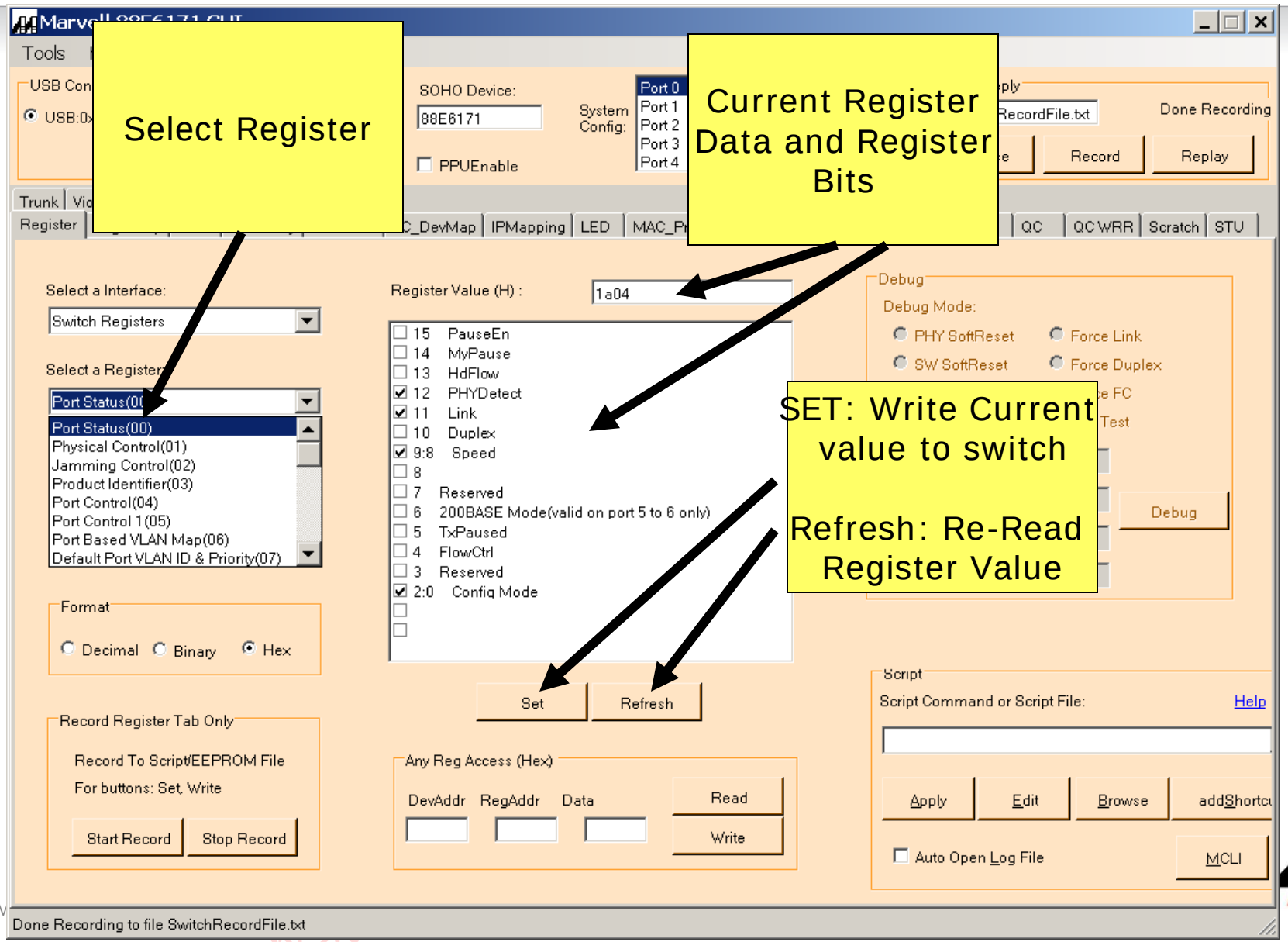
Accessing Registers



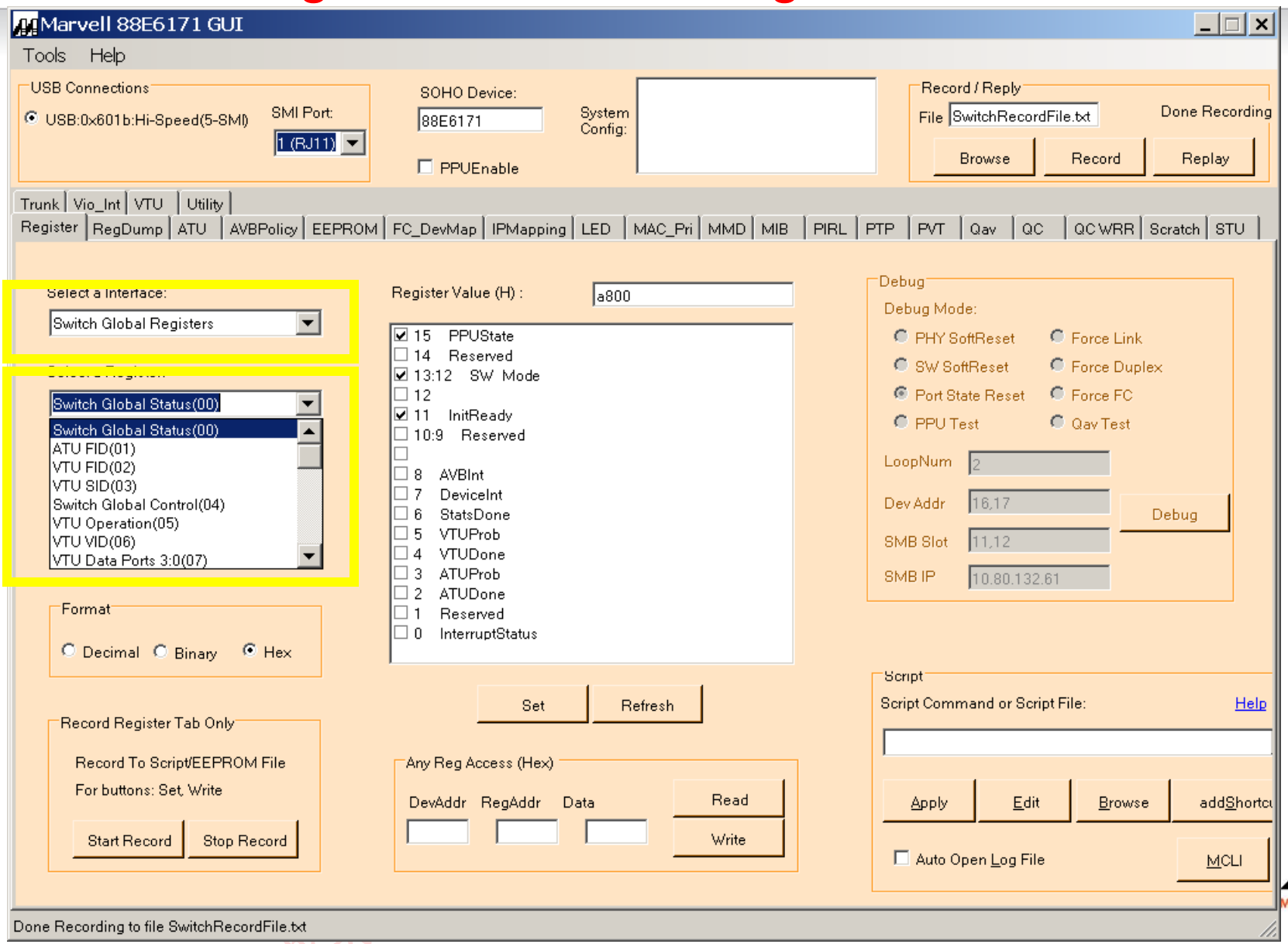
Accessing Switch Port Registers



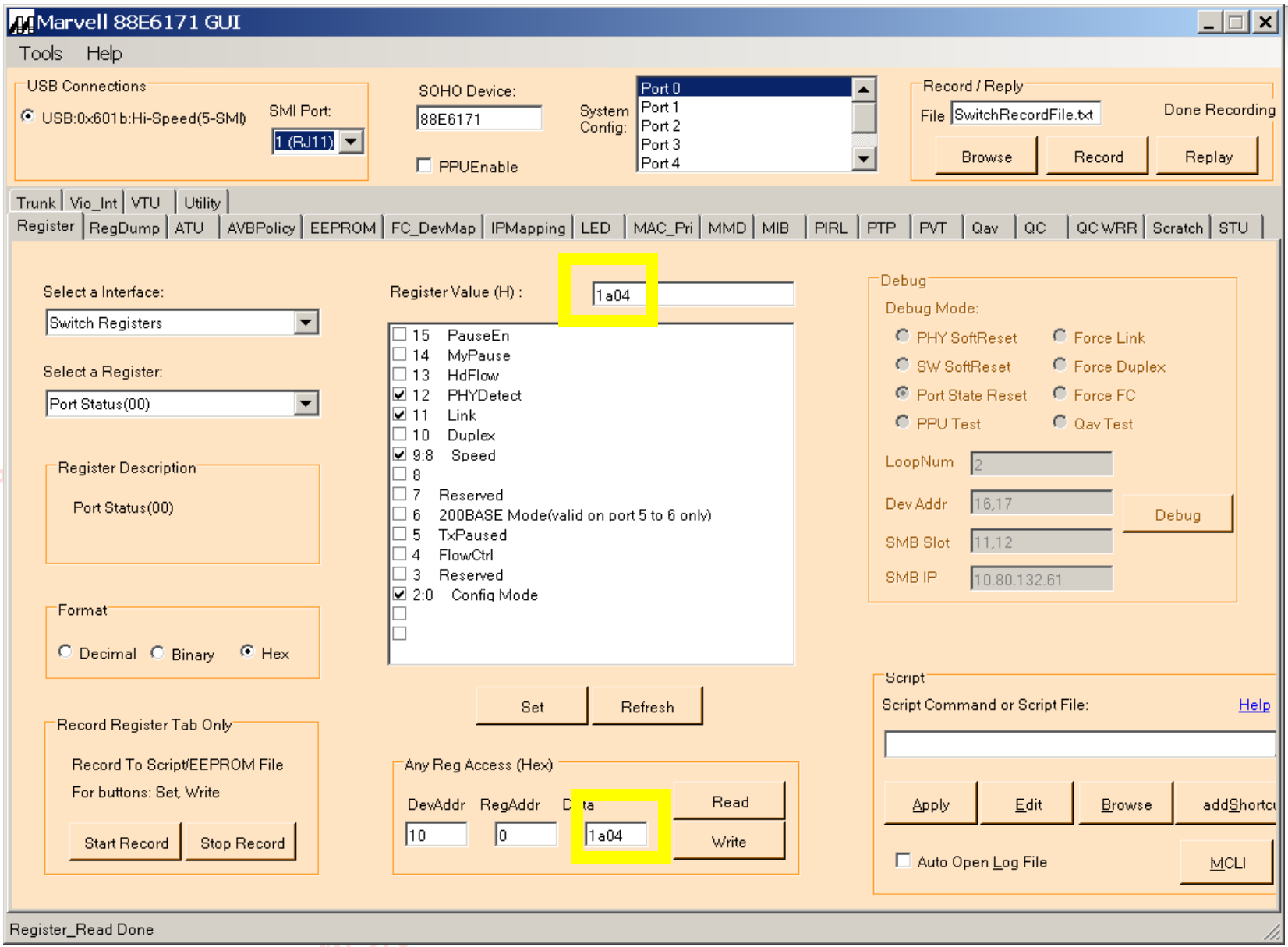
Accessing Switch Port Registers Continued



Accessing Global/Global2 Registers



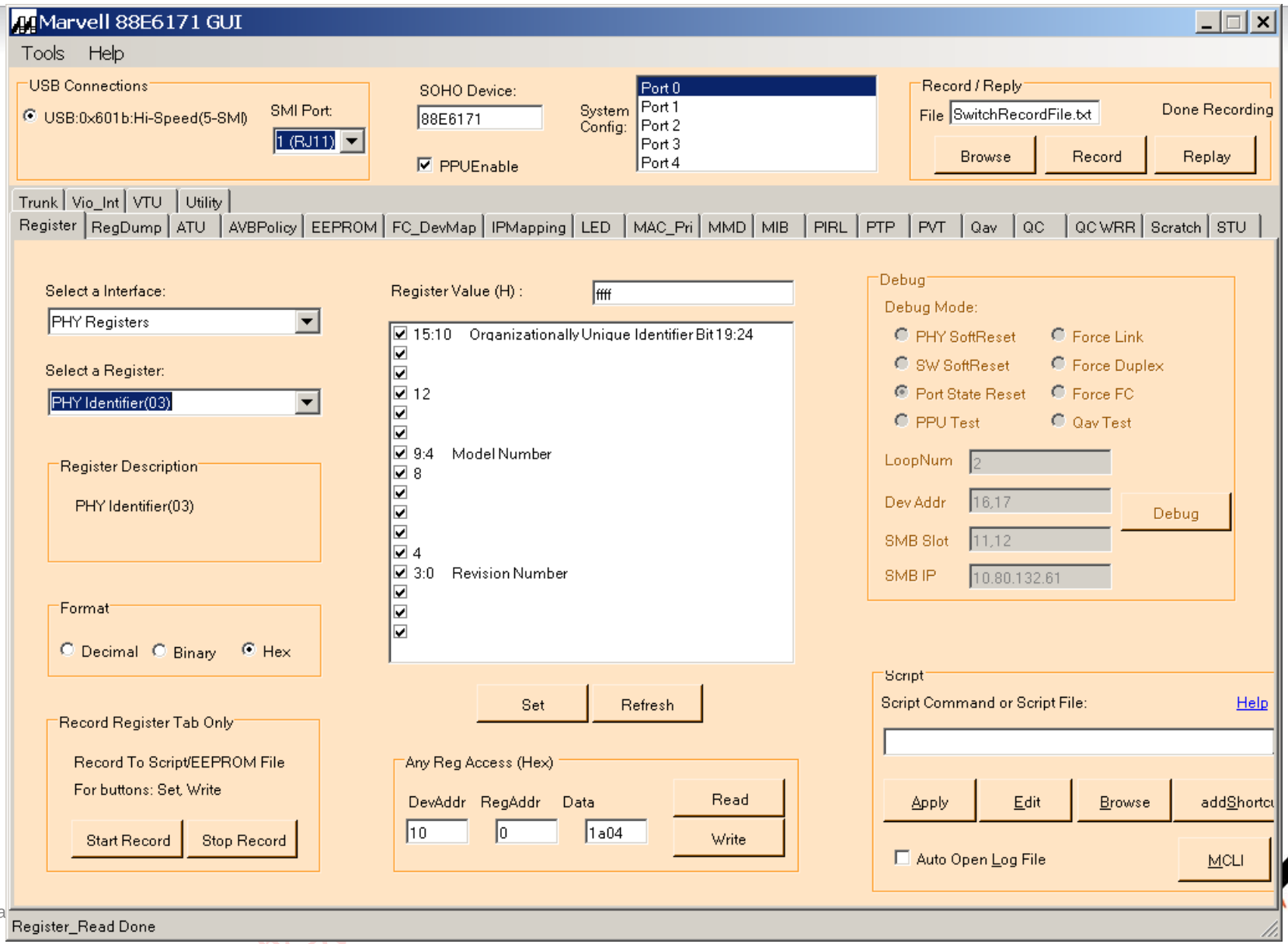
Example of using Any Register Access and GUI access



Accessing Phy Registers

- **On production applications all register access to PHYs is done via SMI_COMMAND/SMI_DATA registers**
  - Global2 Offsets 24 and 25 (0x18 and 0x19)
- **For trouble shooting it is much easier to disable PPU via GUI**
- **An Un-managed switch usually does not require PHY Access**

Accessing PHY Registers with PPU Enabled, Note value read is "ffff"



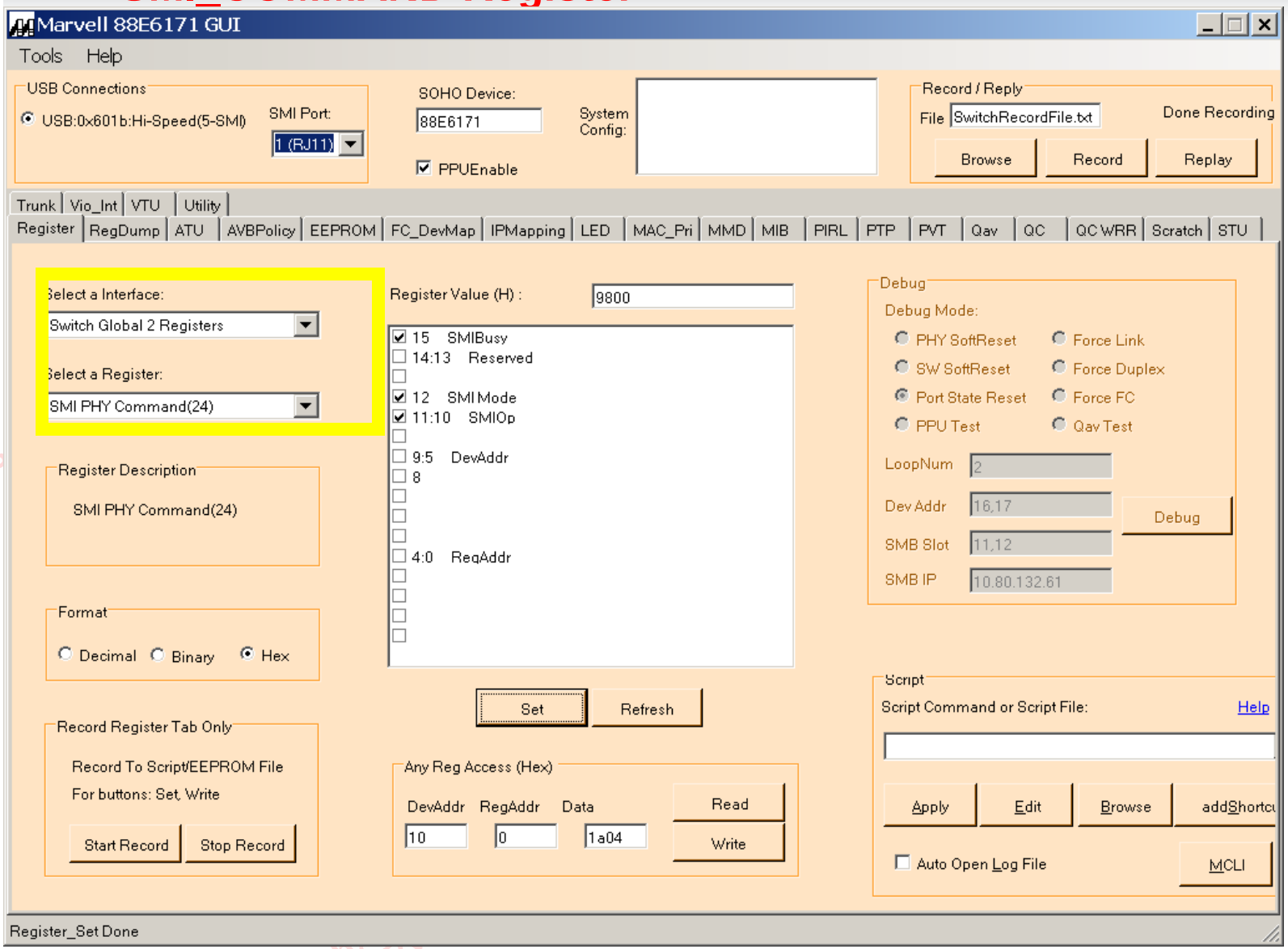
Accessing PHY registers with PPU Enabled

- **SMI_COMMAND(Global 2 Register 24)**
- **Bit 12 = 1 for internal PHYs for**
  - Clause 22 transactions
- **Bits 10:11 Operation Codes**
  - 10=Read
  - 01=Write
- **Bits 9:5=PHY Device Address**
- **Bits 4:0=Register Address Can be used to access Internal or external Phys**

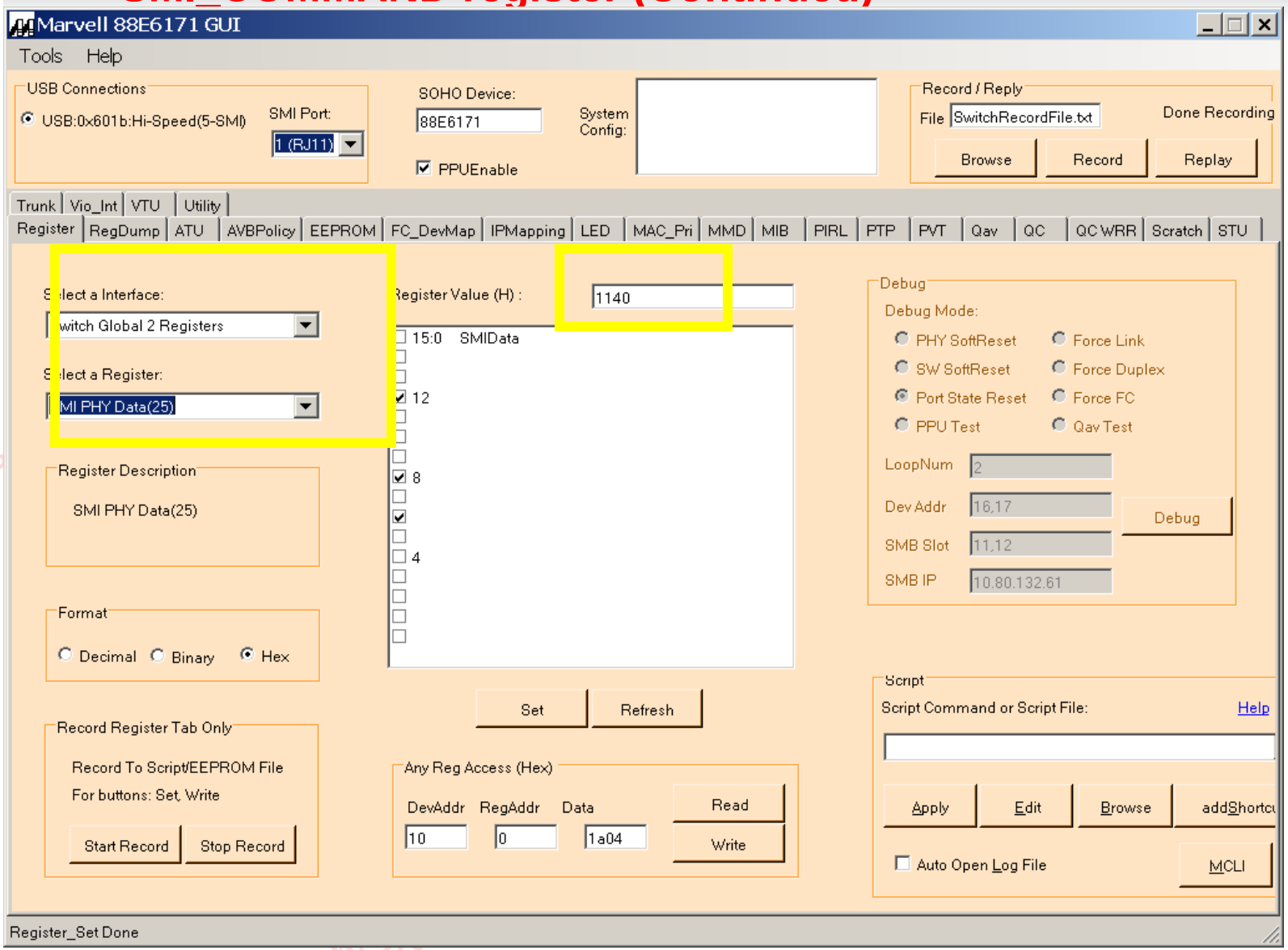
  External Phys must be connected to CPU_MDIO/CPU_MDC
- ***PPU Must be enabled***

- **SMI_DATA (Global 2 Register 25)**
  - Data read from phy
  - Data to be written to PHY

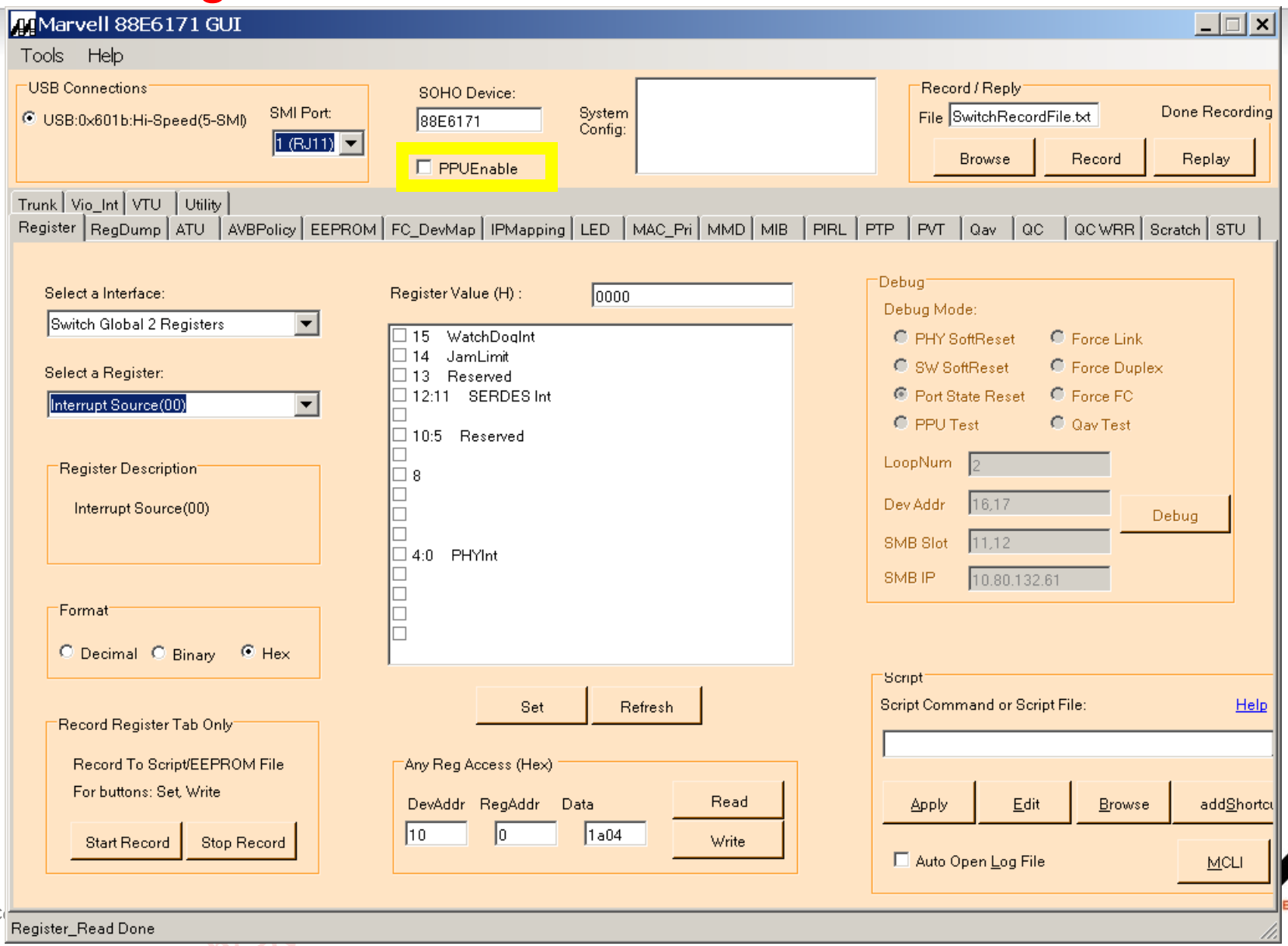
Example: Register Read Phy 0 Register 0 using SMI_COMMAND Register



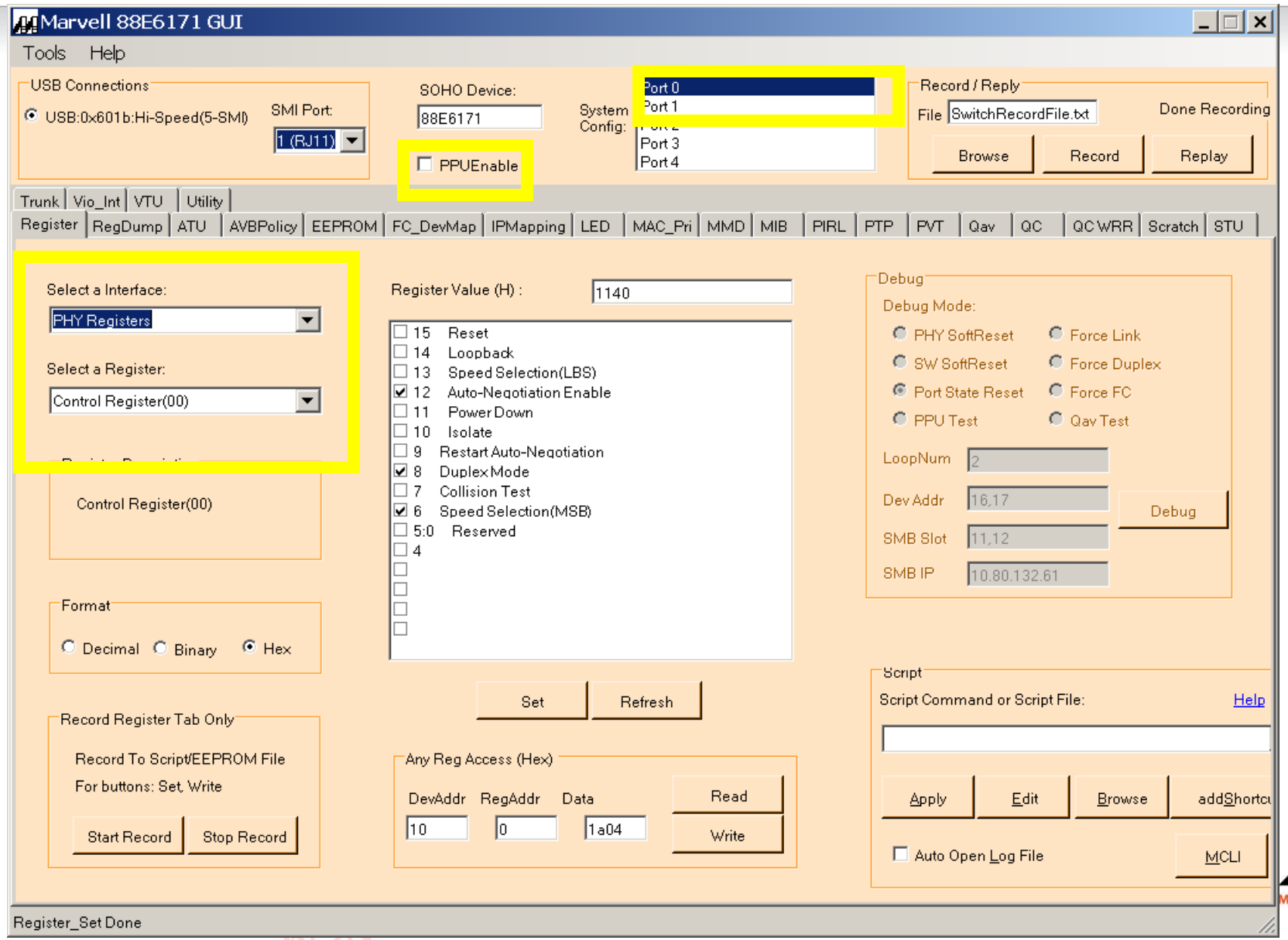
Example: Register Read Phy 0 Register 0 using SMI_COMMAND register (Continued)



Disabling PPU



Example: Reading PHY 0 register 0 directly with PPU disabled



Command Line Interface (new feature)

Register Write

RW U1 Pdd Rdd H

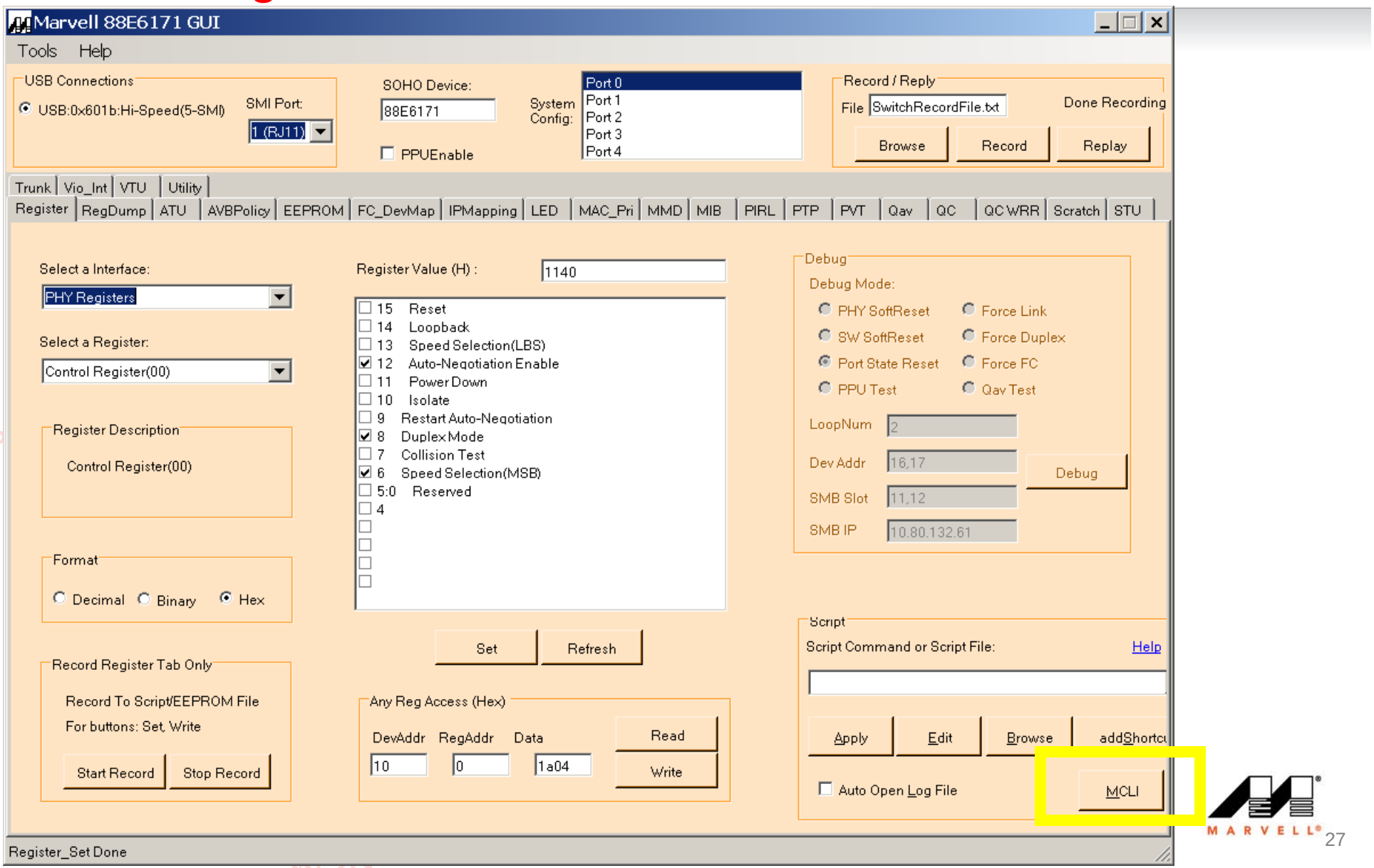
- xx = Device Address Decimal
- yy = Register Offset Decimal
- Nnnn Hex value to be write

Register Read

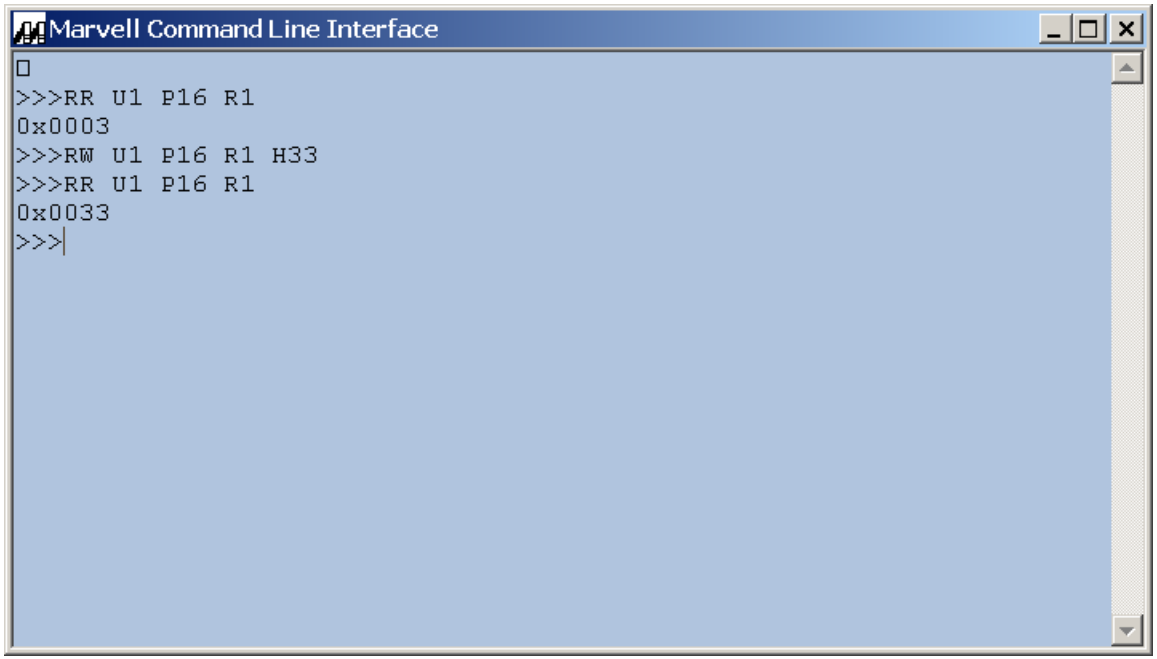
RR U1 Pdd Rdd

- xx = Device Address Decimal
- yy = Register Offset Decimal
- Nnnn Hex value to be write

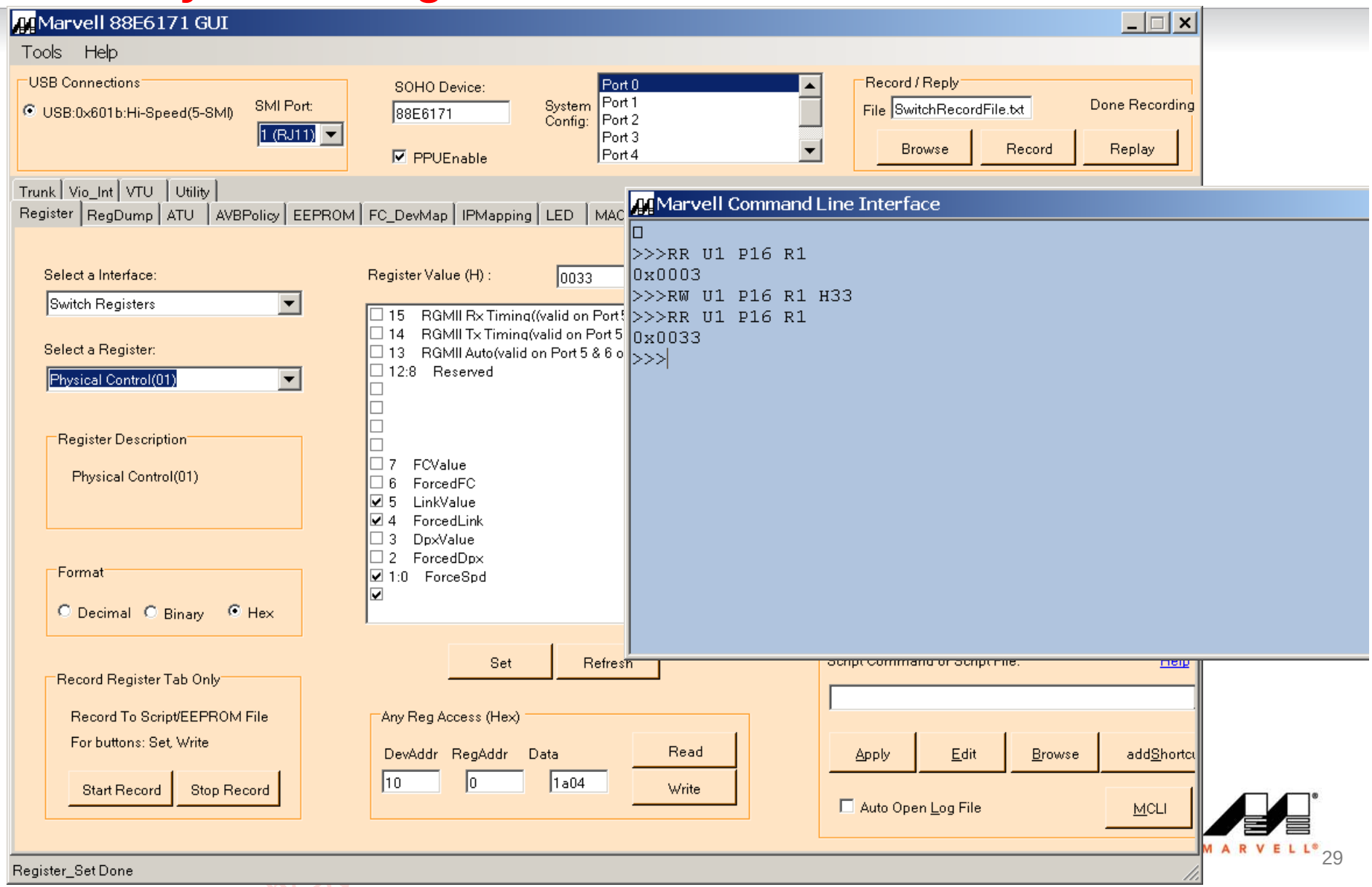
Starting CLI instance



Example CLI window READ Switch Port 0 Register 1 Then change Value



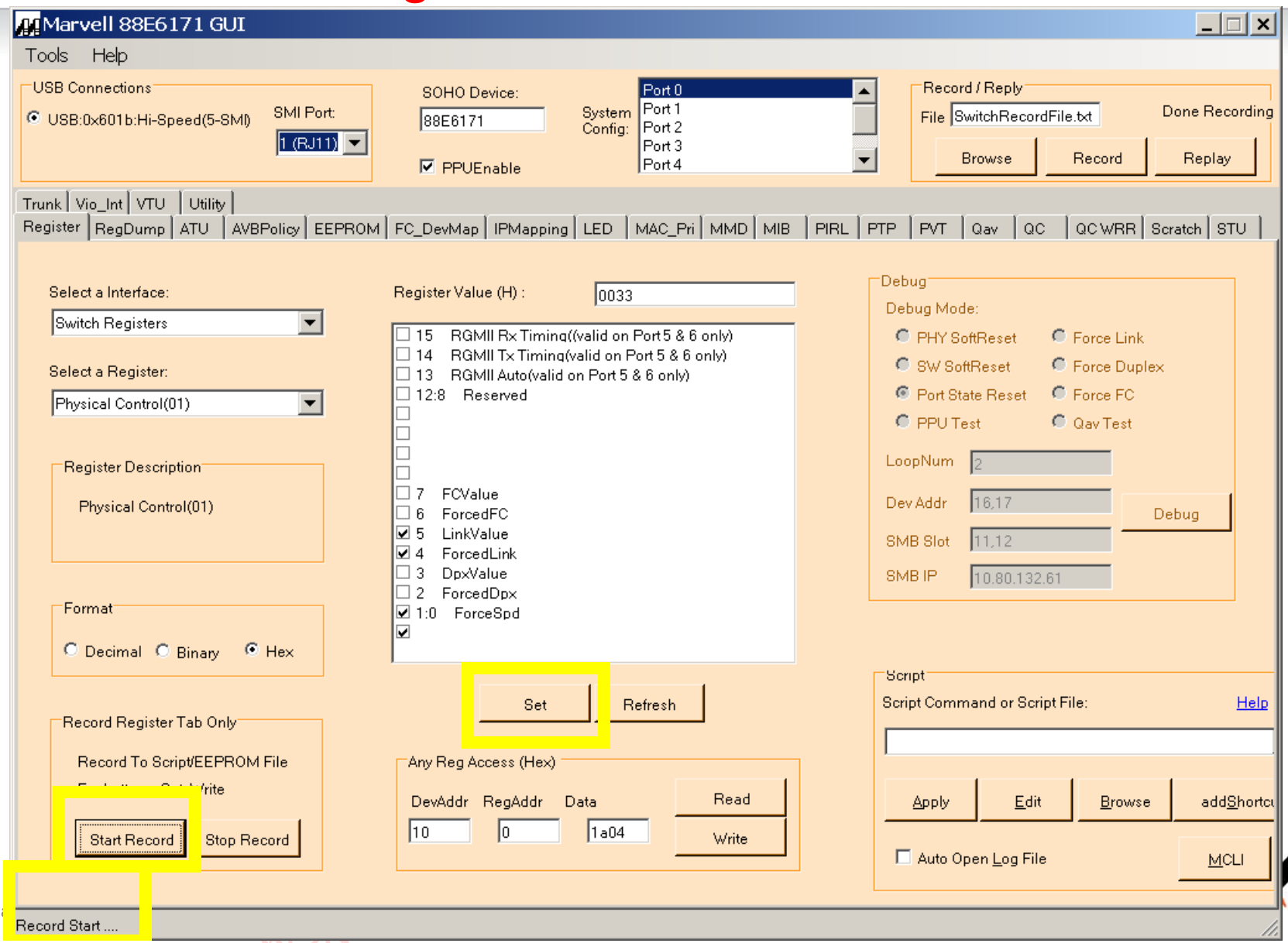
Verify CLI change with GUI window



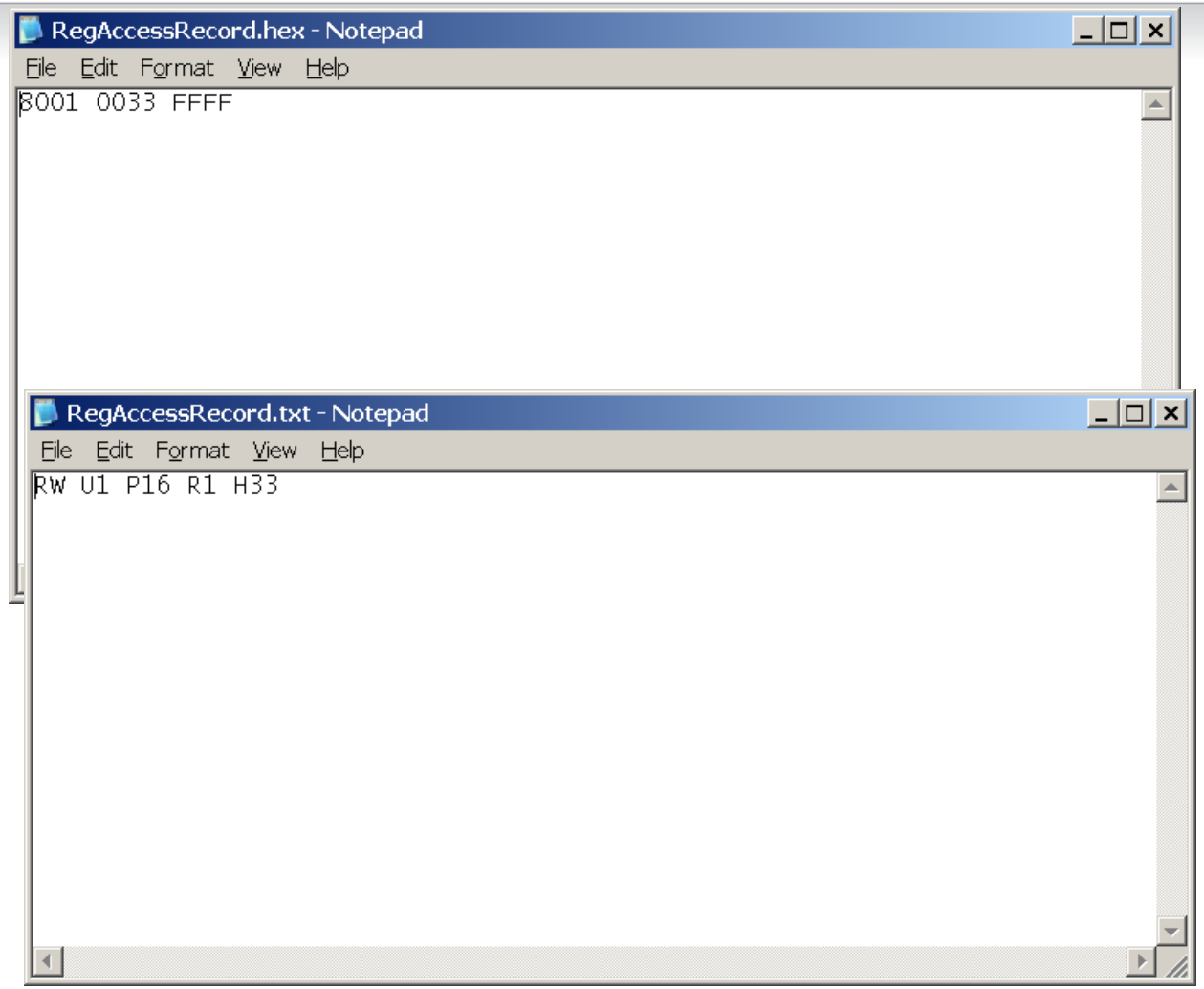
Script Capturing via register TAB

- **Press Start Record in Lower Left corner of GUI screen**
  - Access Any Register change if necessary
  - Press SET to record register value
- **Press Stop Record**
  - Windows Notepad with Captured Script Steps
  - Windows Notepad opens with Captured EEPROM file

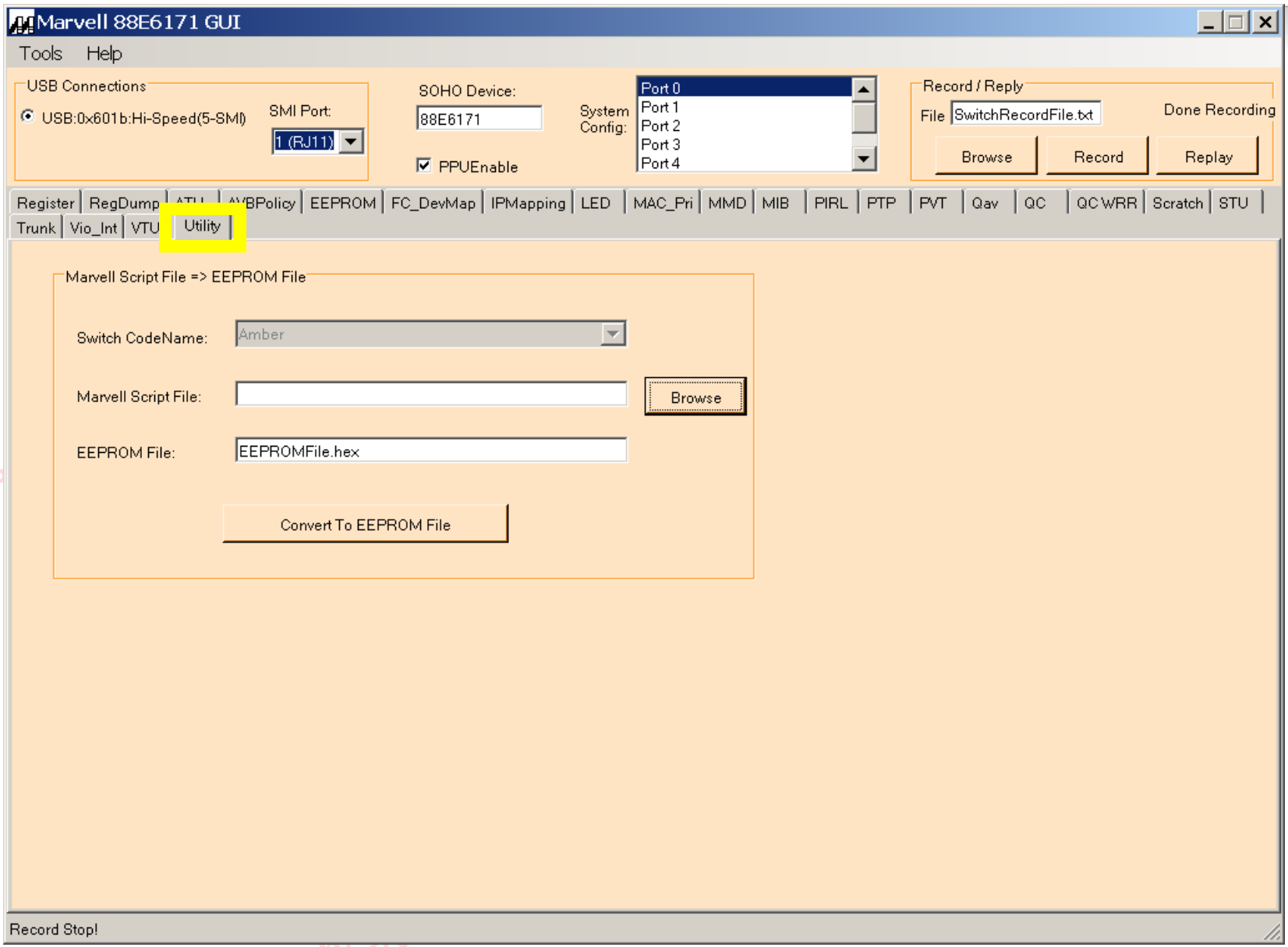
Start Recording



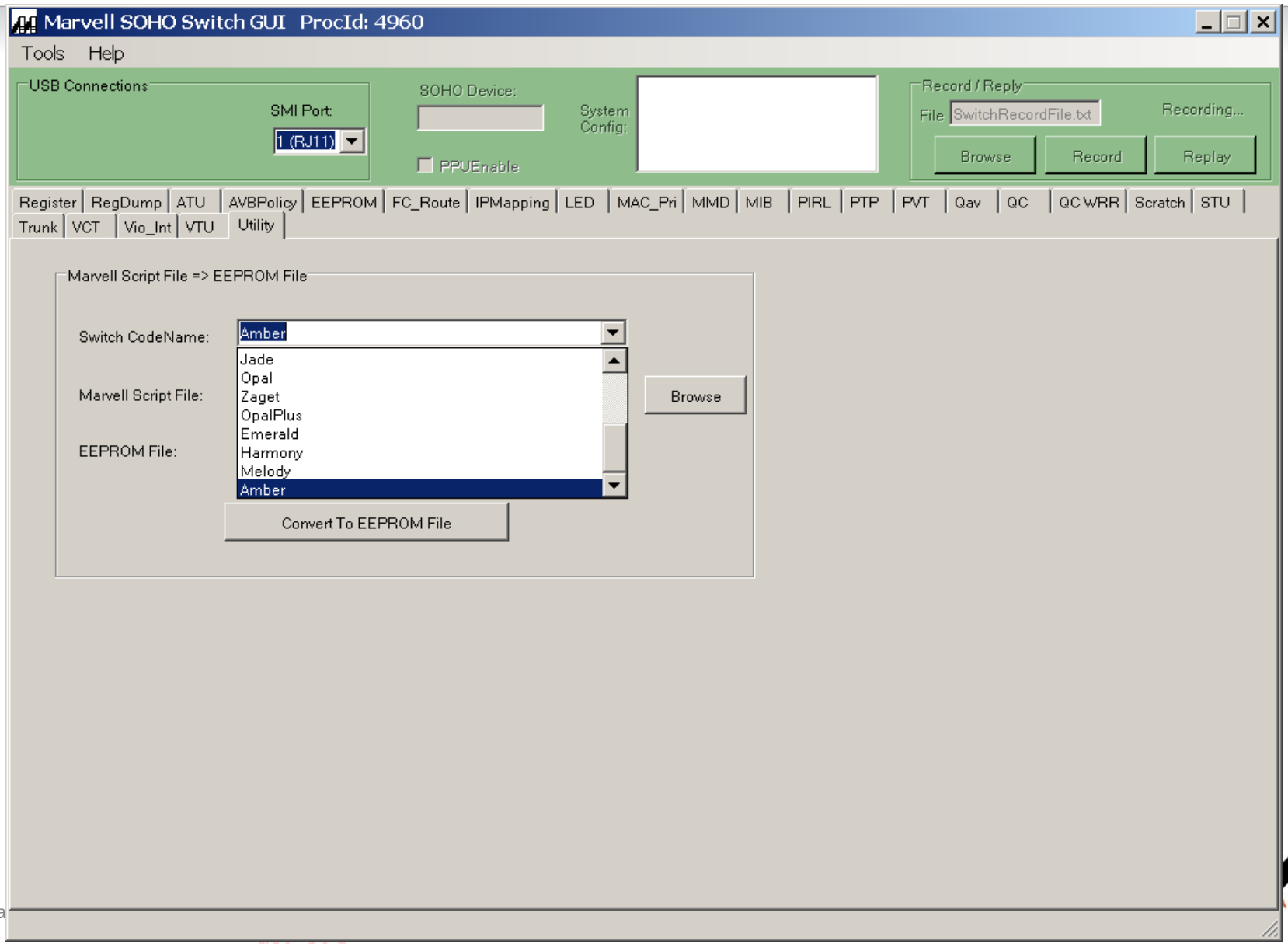
Editing Script



Converting Manually Edited script to EEPROM HEX file



Converting Script commands to EEPROM file without board attached



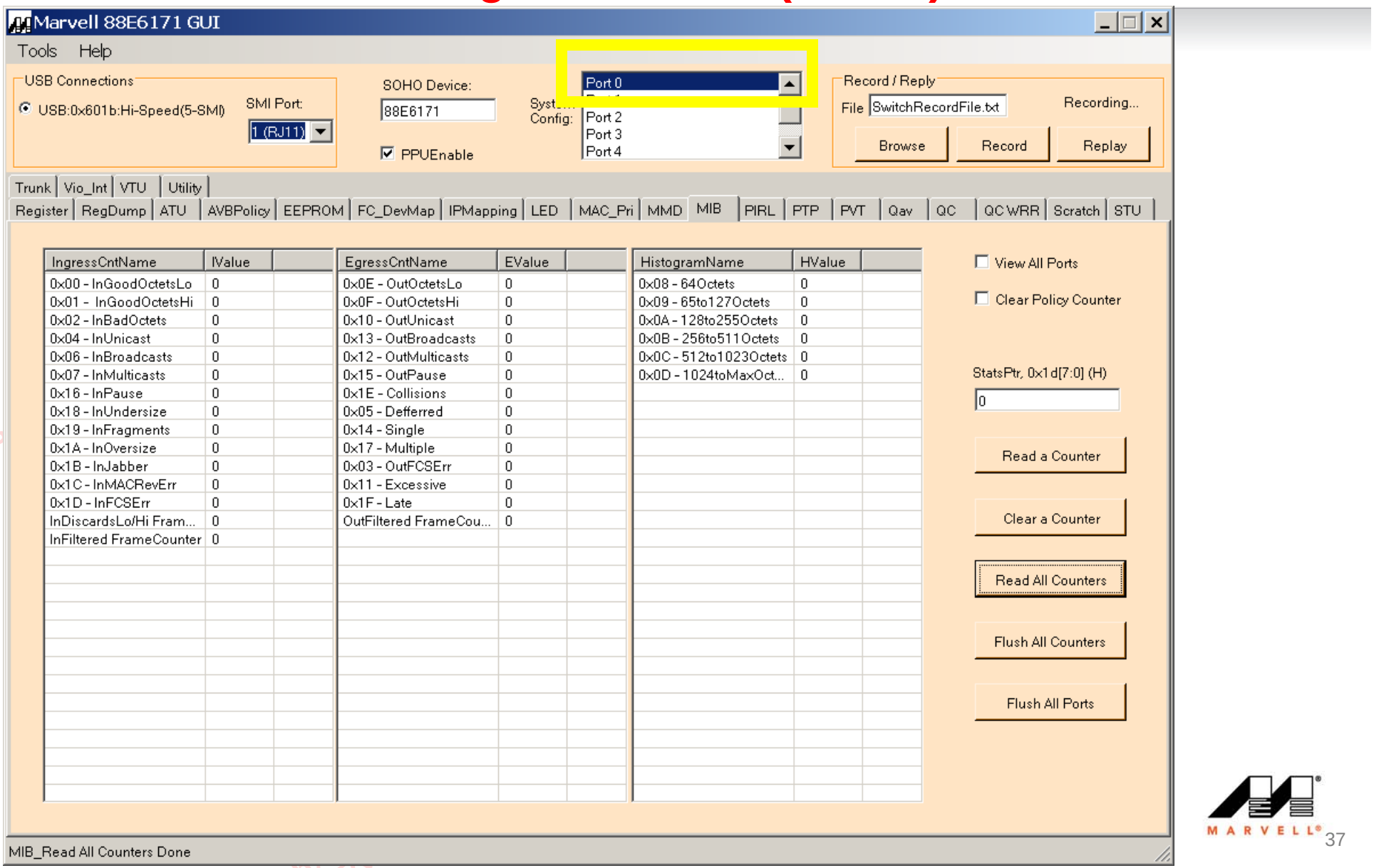
EEPROM Tab

- **Burning onboard Only supported on Amber**
- **EEPROM File Operation**
  - Browse Press Browse to select file
  - Load to burn EEPROM Create/Edit EEPROM file
  - Click EEPROM tab
  - Browse to file
  - Load File
- **EEPROM can be read 1 address at a time using EEPROM Single Operation**
- **Batch Read can random access read multiple address.**
  - You must fill in addresses to read

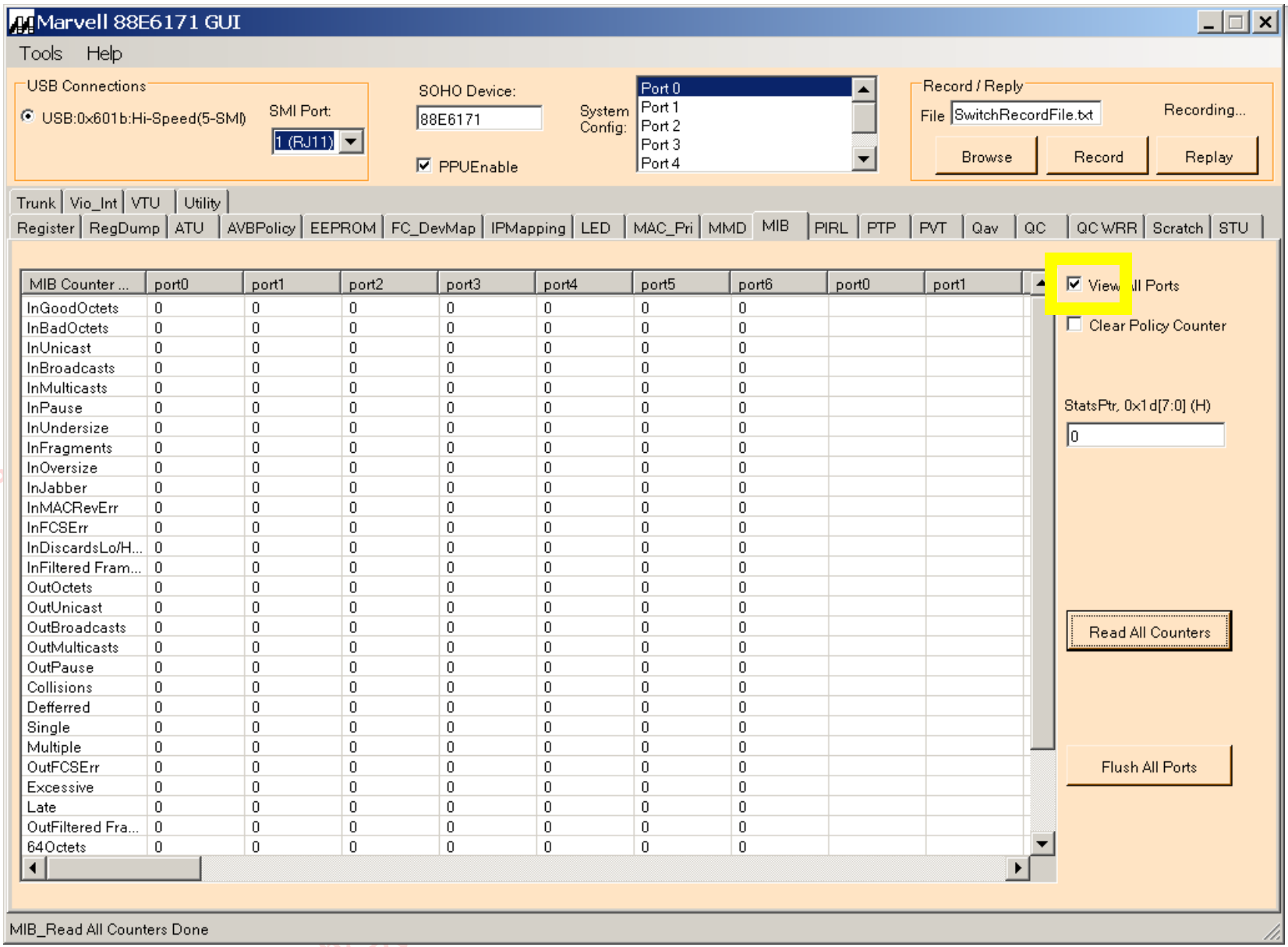
Register Dump TAB

- **Can only dump direct Switch Port and Global Register**
- **Cannot dump**
  - PHY Registers
  - Indirect Registers
- **Can record to text file**

MIB counters Single Port View (Faster)



MIBs Multi Port View



Thank You