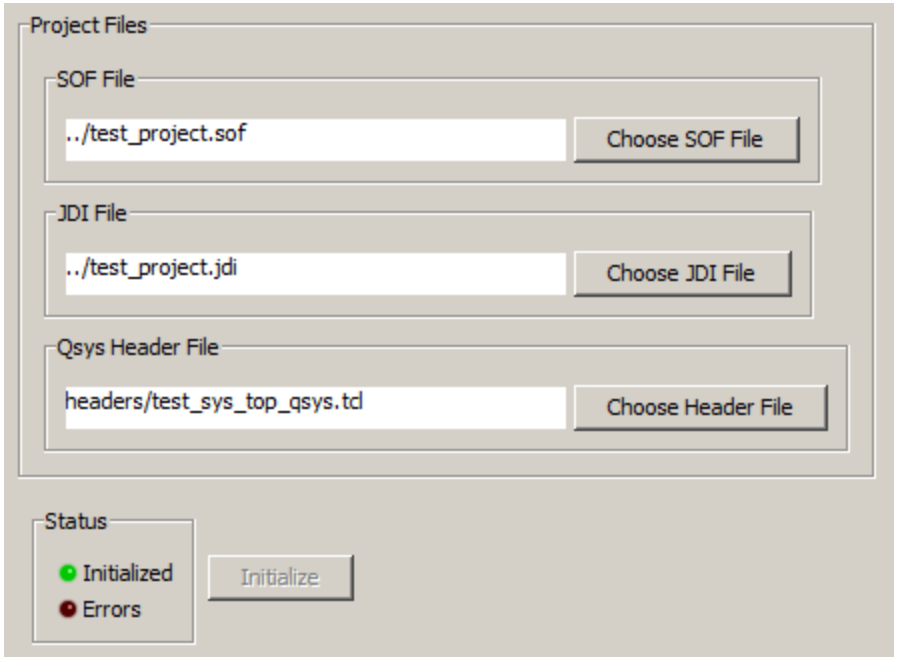
BeMicro SDK
System Console Demo

Overview

- After building the hardware design that is released with this demo, you can start the System Console demo.
- The System Console demo provides dashboards for each of the components in the demo Qsys system.
- Each of the dashboards is explained briefly in the following slides.

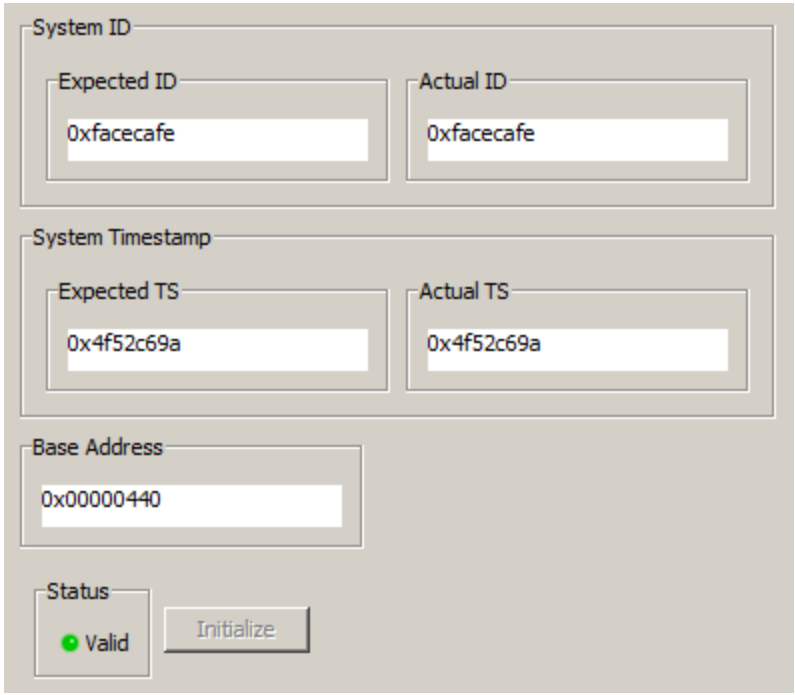
boardInit

- The boardInit dashboard coordinates the project files required to configure the FPGA device and initialize the System Console environment for the rest of the dashboards.
- To initialize the environment, this dashboard will configure the FPGA device, load the JDI file into the console and load the Qsys header module so the other dashboards can reference it.



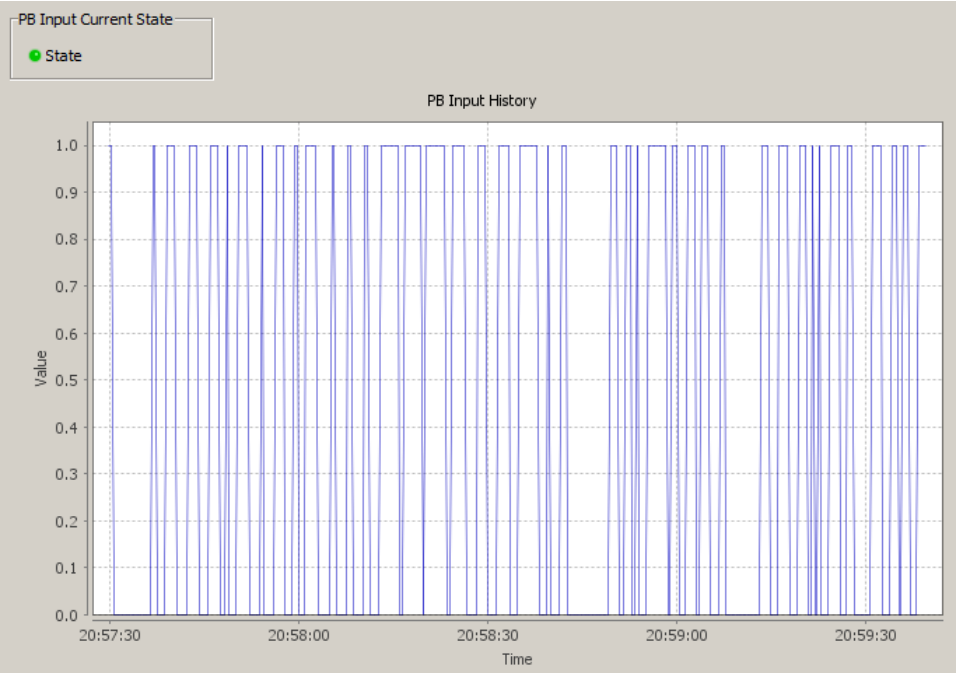
System ID

- The systemID dashboard is used to validate the system ID peripheral in the Qsys system.
- Once this dashboard successfully validates the system ID peripheral, all of the other dashboards can assume that the proper FPGA design is loaded and available in the environment.



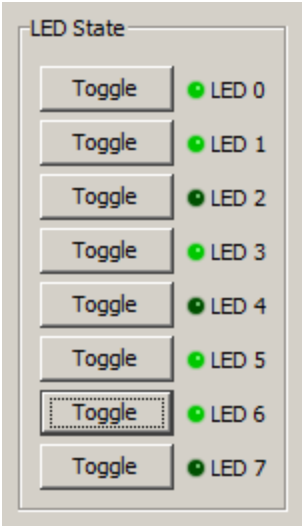
Push Button PIO

- The pbPIO dashboard provides an LED widget to track the live state of the push button as well as a time chart widget to track the history of the push button.



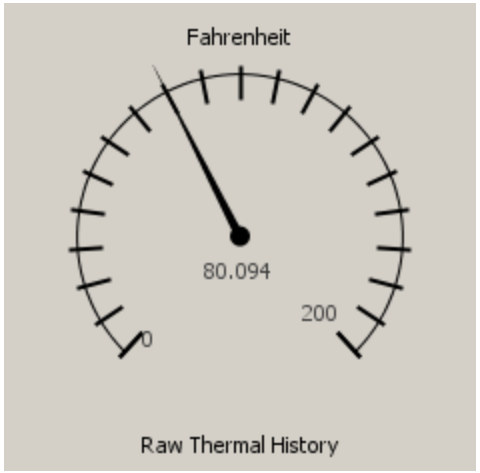
LED PIO

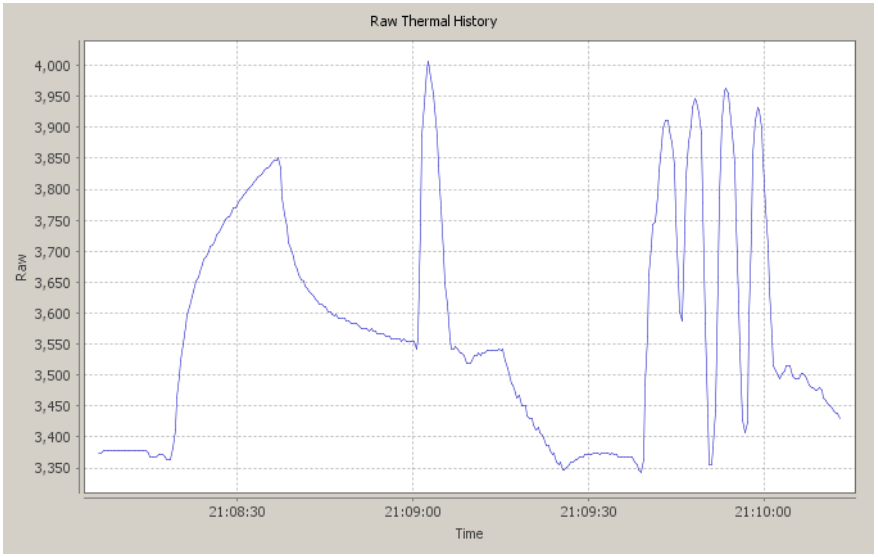
- The ledPIO dashboard monitors the live state of the physical LED PIO bits in the Qsys design and displays them on LED widgets in the console.
- A “toggle” button is provided along with each LED to allow the user to toggle the state of the LED.



Thermometer SPI

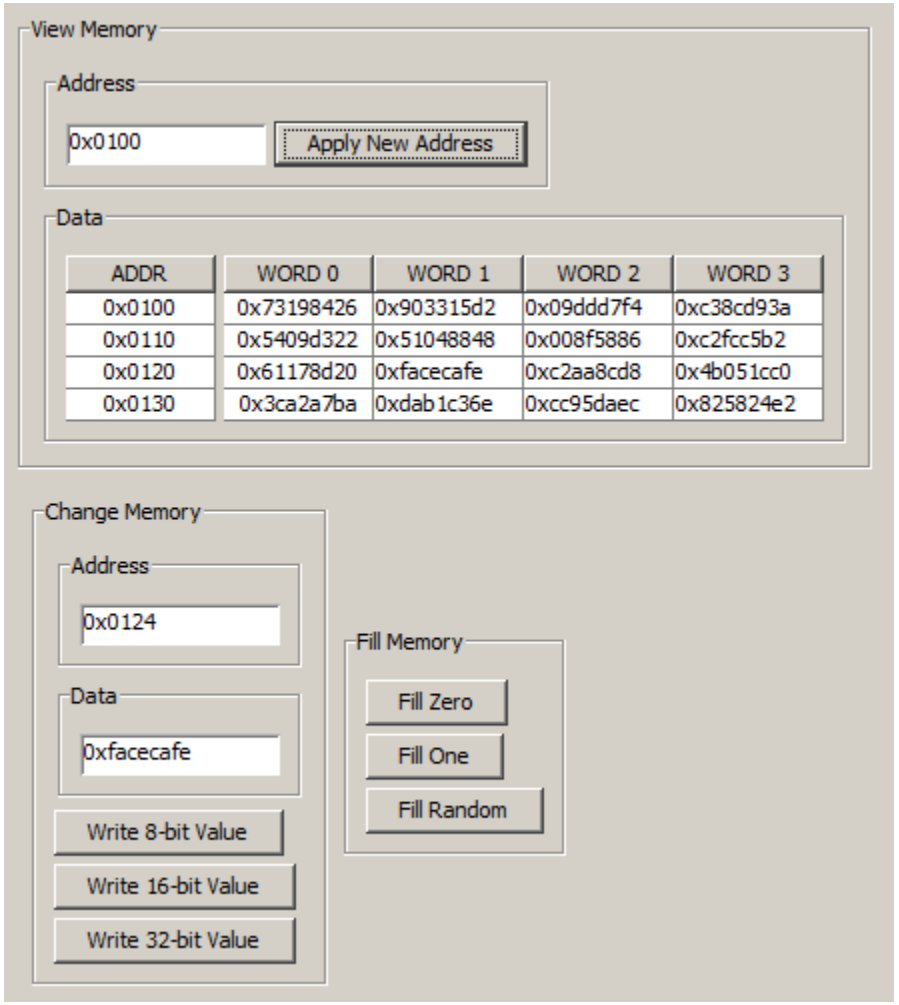
- The thermSPI dashboard provides a dial widget to display the current temperature reading in Fahrenheit degrees. A time chart widget is also provided to track the history of the raw thermometer samples.
- These widgets are constantly updated with the live value of the thermometer.





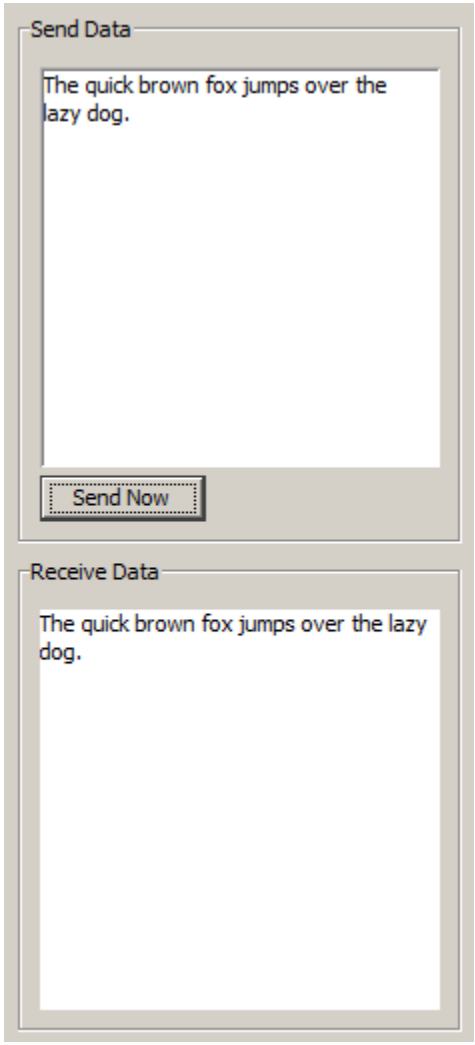
On Chip RAM

- The ocRAM dashboard provides a collection of widgets to view a 64 byte window into the onchip RAM. The user can set the base address of the 64 byte view. This view is constantly updated with the live contents of the RAM.
- There are also widgets provided to allow the user to write 8, 16 and 32 bit data to arbitrary addresses in the memory.
- There are also widgets that can fill the entire RAM with zero, one or random patterns.



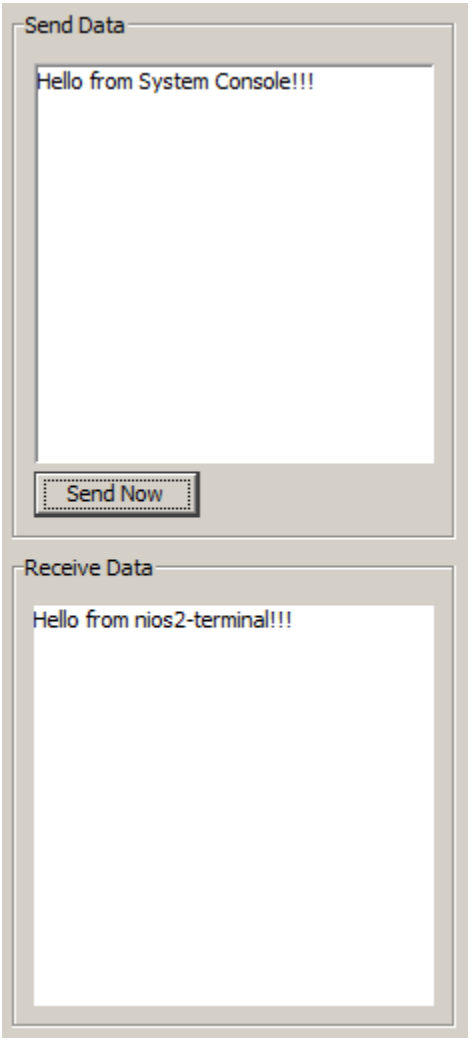
Byte Stream

- The byteStream dashboard allows the user to send data down thru the bytestream component inside the Qsys system. The bytestream component has a FIFO connecting the source interface to its sink interface, so data that is sent down through the source is simply returned back through the sink.
- The receive data widget is continuously polling for live data coming back thru the sink interface.
- The user can type data into the send data widget and press the “Send Now” button to send the data down thru the source interface.



JTAG UART

- The jtagUart dashboard allows the user to send data and receive data thru the JTAG UART component inside the Qsys system. The nios2-terminal utility can be used to capture data sent from the dashboard and send data into the dashboard..
- The receive data widget is continuously polling for live data coming back thru the JTAG UART interface.
- The user can type data into the send data widget and press the “Send Now” button to send the data down thru the JTAG UART interface.




```
Hello from System Console!!!
```