

TE0841 System Controller

System Control CPLD

TE0841-01 has a small 256 Macrocell CPLD on-board to perform some basic System Control functionality.

Main Functions

- JTAG Multiplexing (forwarding)
- Reset and POR_B Control
- LED Control
- PUDC Control
- Global powerdown Control

In minimal standard function the CPLD sets PUDC value (low or high), and forwards reset, JTAG and LED to/from the FPGA.

System Control CPLD can implement many advance functions as well, some list of possible extra functionality:

- Programmable Watchdog
- Power up time counter
- Hardware identification/Security
- Disabling of JTAG Interface
- Extending the available I/O on the SoM

System Control IP Core

This is small IP Core to help setting up fixed hardware functions on TE0841 and to communicate with the System Controller CPLD. This care provides optional Interface ports to attach to System Controller (MicroBlaze MCS based Microcontroller running System Control Firmware).

SoM Settings:

- Oscillator Enable
- DDR4 Power Control
- GT Transceiver Power Control

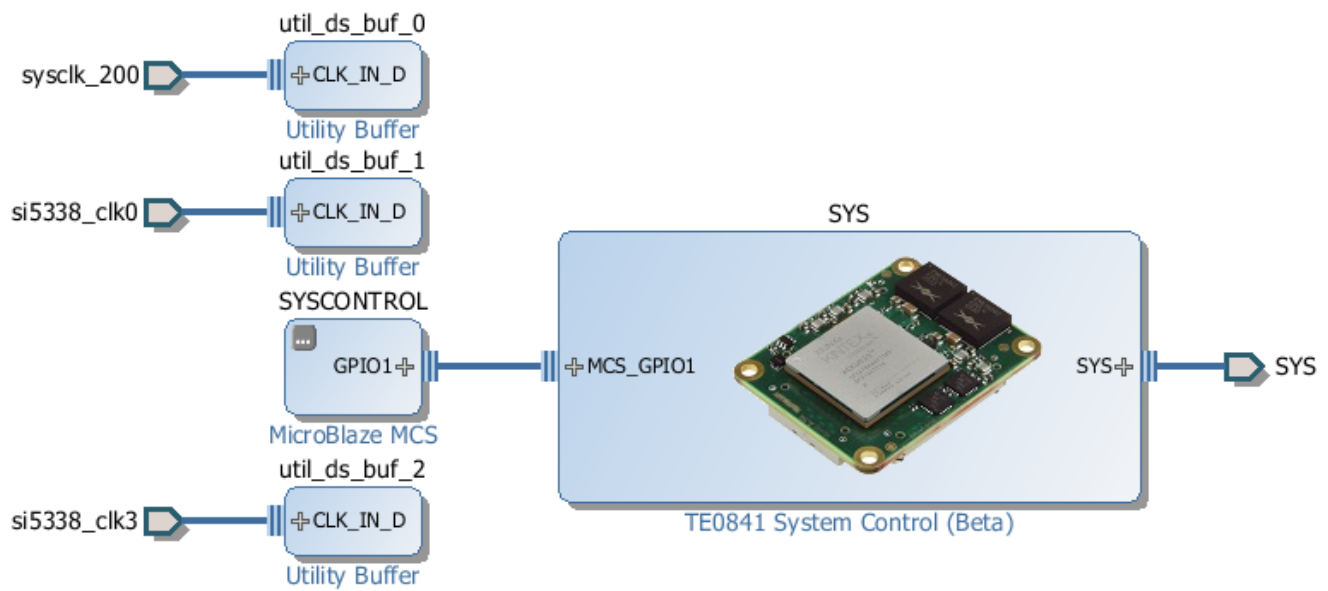
The above settings can be set to to:

- Fixed OFF/Disabled
- Fixed ON/Enabled
- User Control
- MicroBlaze MCS Control

System Control Unit

Xilinx MicroBlaze MCS can optionally be used as System Controller for various functions. This System Controller can be considered similar to PMU subsystem in Xilinx Zynq MPSoC devices. Main function of the System Controller is PLL Initialization and optional monitoring.

Example Design



All Interfaces visible are connected by Vivadi Board automation, the SYS interface includes all TE0841 fixed on-board connections that the System Controller manages. SYSCONTROL is a small MicroBlaze MCS based controller that does initialize the Si5338 PLL Multisynth and can perform other functions as well.