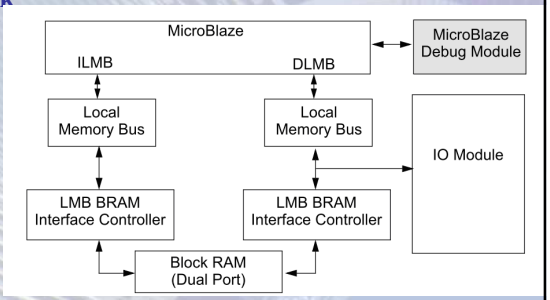
Microblaze MCS

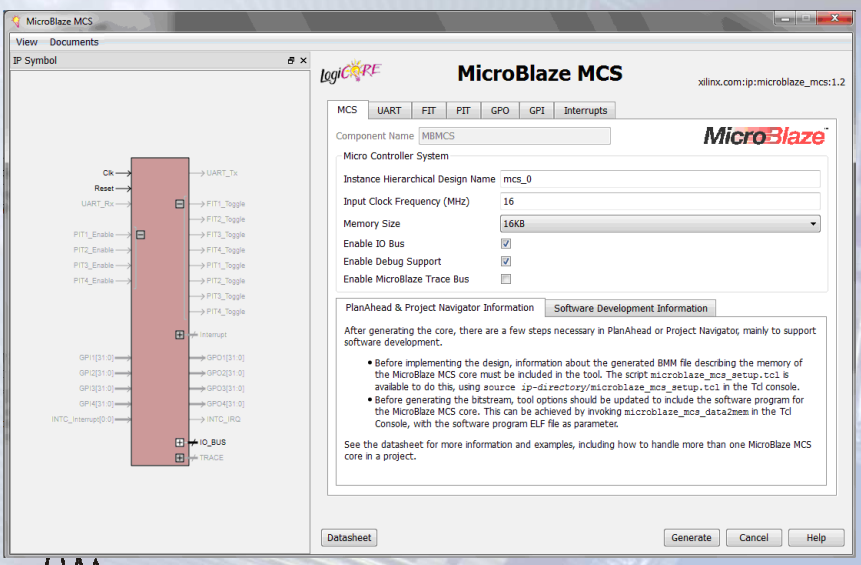
Microblaze Micro Controller

Tulajdonságok

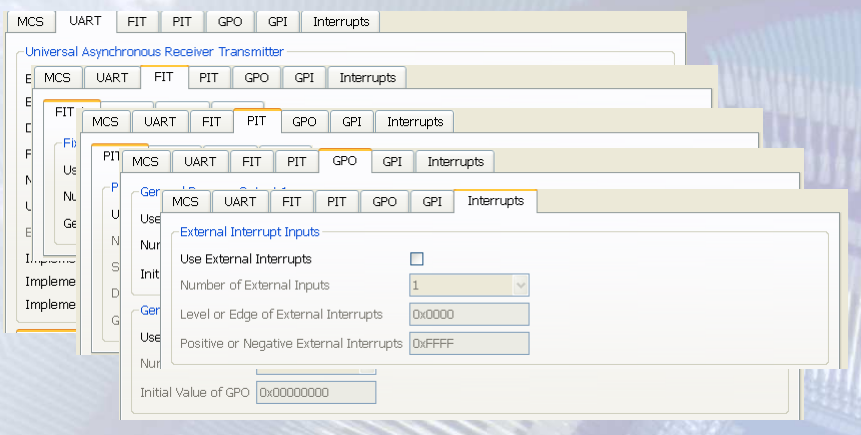
- **MicroBlaze processzor**
- **LMB BRAM memória**
- **MicroBlaze Debug Module (MDM)**
- **LMB buszra illesztett IO modulok**
  - Külső IO Busz
  - Megszakítás vezérlő
  - UART
  - Fixed Interval Timers (FIT)
  - Prog.Interval Timers (PIT)
  - General Purpose Input
  - General Purpose Output



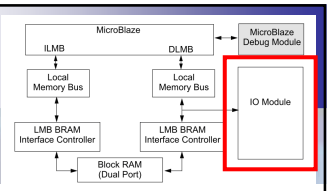
Konfiguráció 1



Konfiguráció 2



Interfészek



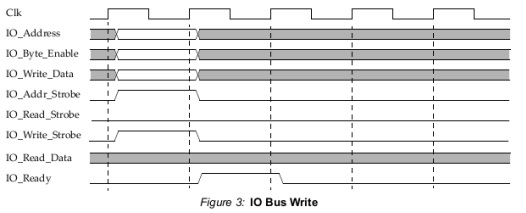


Figure 3: **IO Bus Write**

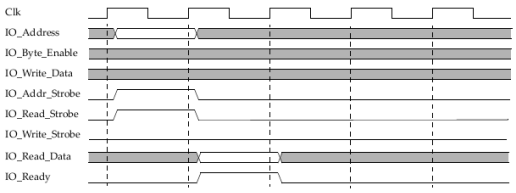
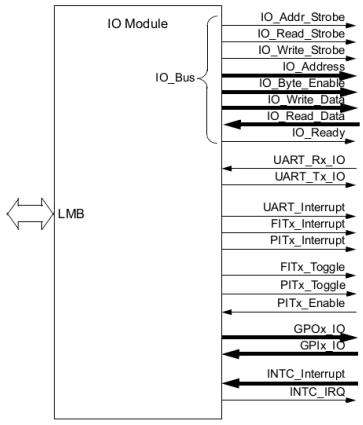


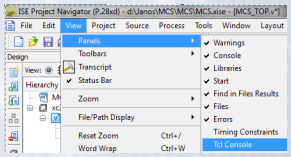
Figure 4: **IO Bus Read**

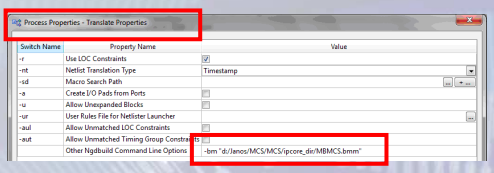


Címtartomány

Address (hex)	Name	Access Type	Description
0x0-C_MEMSIZE-1	Local Memory	RW	Local Memory for MicroBlaze software
C_MEMSIZE-0x7FFFFFFF	Reserved		
0x80000000	UART_RX	R	UART Receive Data Register
0x80000004	UART_TX	W	UART Transmit Data Register
0x80000008	UART_STATUS	R	UART Status Register
0x8000000C	Reserved		
0x80000010	GPO1	W	General Purpose Output 1 Register
0x80000014	GPO2	W	General Purpose Output 2 Register
0x80000018	GPO3	W	General Purpose Output 3 Register
0x8000001C	GPO4	W	General Purpose Output 4 Register
0x80000020	GPI1	R	General Purpose Input 1 Register
0x80000024	GPI2	R	General Purpose Input 2 Register
0x80000028	GPI3	R	General Purpose Input 3 Register
0x8000002C	GPI4	R	General Purpose Input 4 Register
0x8000007C	Reserved		
0x80000080-0xBFFFFFFF	Reserved		
0xC0000000-0xFFFFFFFF	IO Bus	RW	Mapped to IO Bus address output IO_Address

Implementáció





source ipcore_dir/microblaze_mcs_setup.tcl

Példányosítás

```
`timescale 1ns / 1ps

module MCS_TOP(
    input clk16,
    input reset,

    input  uart_rx,
    output uart_tx,

    input  [7:0] sw,
    output [7:0] led

    );


MBMCS mcs_0 (
  .Clk(clk16), // input Clk
  .Reset(reset), // input Reset

  .UART_Rx(uart_rx), // input UART_Rx
  .UART_Tx(uart_tx), // output UART_Tx
  .GPO1(led), // output [7 : 0] GPO1
  .GPI1(sw), // input [7 : 0] GPI1
  .GPI1_Interrupt() // output GPI1_Interrupt
);

endmodule
```

Erőforrás kihasználás

Parameter Values (other parameters at default value)													Device Resources	
C_USE_UART_RX	C_USE_UART_TX	C_INTC_USE_EXT_INTR	C_INTC_INTR_SIZE	C_USE_FIT1	C_FIT1_No_CLOCKS	C_USE_PIT1	C_PIT1_SIZE	C_USE_GPI1	C_GPI1_SIZE	C_USE_GPO1	C_GPO1_SIZE	C_USE_IO_BUS	C_DEBUG_ENABLE	LUTs	Flip-Flops
1	1	0	0	0	0	0	0	0	0	0	0	0	0	716	299
1	1	1	5	0	0	0	0	0	0	0	0	0	0	733	330
1	1	1	5	1	65000	0	0	0	0	0	0	0	0	740	342
1	1	1	5	1	65000	1	32	0	0	0	0	0	0	783	434
1	1	1	5	1	65000	1	32	1	32	0	0	0	0	804	466
1	1	1	5	1	65000	1	32	1	32	1	32	0	0	805	498
1	1	1	5	1	65000	1	32	1	32	1	32	1	0	820	602
1	1	1	5	1	65000	1	32	1	32	1	32	1	1	1022	959