

Qsys File

Use	Connections	Name	Description	Export	Clock	Base	End	IRQ
<input checked="" type="checkbox"/>		clk_0	Clock Source					
<input checked="" type="checkbox"/>		clk_in	Clock Input	clk				
<input checked="" type="checkbox"/>		clk_in_reset	Reset Input	Double-click to export	clk_0			
<input checked="" type="checkbox"/>		clk	Clock Output	Double-click to export				
<input checked="" type="checkbox"/>		clk_reset	Reset Output	Double-click to export				
<input checked="" type="checkbox"/>		nios2_gen2_0	Nios II Processor					
<input checked="" type="checkbox"/>		clk	Clock Input	Double-click to export	clk_0			
<input checked="" type="checkbox"/>		reset	Reset Input	Double-click to export	[clk]			
<input checked="" type="checkbox"/>		data_master	Avalon Memory Mapped Master	Double-click to export	[clk]			
<input checked="" type="checkbox"/>		instruction_master	Avalon Memory Mapped Master	Double-click to export	[clk]			
<input checked="" type="checkbox"/>		irq	Interrupt Receiver	Double-click to export	[clk]			IRQ 0
<input checked="" type="checkbox"/>		debug_reset_request	Reset Output	Double-click to export	[clk]			IRQ 31
<input checked="" type="checkbox"/>		debug_mem_slave	Avalon Memory Mapped Slave	Double-click to export	[clk]	# 0x2800	0x2fff	
<input checked="" type="checkbox"/>		custom_instruction_master	Custom Instruction Master	Double-click to export				
<input checked="" type="checkbox"/>		onchip_memory2_0	On-Chip Memory (RAM or ROM)					
<input checked="" type="checkbox"/>		clk1	Clock Input	Double-click to export	clk_0			
<input checked="" type="checkbox"/>		reset1	Reset Input	Double-click to export	[clk1]	# 0x1000	0x1fff	
<input checked="" type="checkbox"/>		jtag_uart_0	JTAG UART					
<input checked="" type="checkbox"/>		clk	Clock Input	Double-click to export	clk_0			
<input checked="" type="checkbox"/>		reset	Reset Input	Double-click to export	[clk]			
<input checked="" type="checkbox"/>		avalon_jtag_slave	Avalon Memory Mapped Slave	Double-click to export	[clk]	# 0x3040	0x3047	
<input checked="" type="checkbox"/>		irq	Interrupt Sender	Double-click to export				
<input checked="" type="checkbox"/>		data_pattern_generator_0	Altera Avalon Data Pattern Generator					
<input checked="" type="checkbox"/>		csr_clk	Clock Input	Double-click to export	clk_0			
<input checked="" type="checkbox"/>		reset	Reset Input	Double-click to export	[csr_clk]			
<input checked="" type="checkbox"/>		csr_slave	Avalon Memory Mapped Slave	Double-click to export	[csr_clk]	# 0x3020	0x303f	
<input checked="" type="checkbox"/>		conduit_pattern_out_dk	Conduit					
<input checked="" type="checkbox"/>		conduit_pattern_out	Conduit					
<input checked="" type="checkbox"/>		data_pattern_checker_0	Altera Avalon Data Pattern Checker					
<input checked="" type="checkbox"/>		csr_clk	Clock Input	Double-click to export	clk_0			
<input checked="" type="checkbox"/>		reset	Reset Input	Double-click to export	[csr_clk]			
<input checked="" type="checkbox"/>		csr_slave	Avalon Memory Mapped Slave	Double-click to export	[csr_clk]	# 0x3000	0x301f	
<input checked="" type="checkbox"/>		conduit_pattern_in_dk	Conduit					
<input checked="" type="checkbox"/>		conduit_pattern_in	Conduit					

Messages

Type	Path	Message
Warning	1	Warning
Warning	Sandbox.jtag_uart_0	Interrupt sender jtag_uart_0.irq is not connected to an interrupt receiver
Info	1	Info Message
Info	Sandbox.jtag_uart_0	JTAG UART IP input clock need to be at least double (2x) the operating frequency of JTAG TCK on board

0 Errors, 1 Warning

Hello_world_small.c

```
// "Small Hello World" example.
```

```
#include "sys/alt_stdio.h"  
#include "system.h"  
#include <io.h>  
#include "os/alt_syscall.h"  
#include <unistd.h>
```

```
int alt_main()
```

```
{
```

```
    unsigned int PRBS31 = 0x8;  
    unsigned int ENABLE = 0x1;
```

```
    alt_putstr("Hello from Nios II!\n\n");  
    usleep(500000);
```

```
alt_putstr("Begin configuration of Pattern Generator\n\n");
usleep(500000);

alt_putstr("Setting pattern to PRBS31...\n");
usleep(500000);

IOWR_32DIRECT(DATA_PATTERN_GENERATOR_0_BASE, 4, PRBS31);
usleep(500000);
alt_printf("The value read from Generator is %x\n",
IORD_32DIRECT(DATA_PATTERN_GENERATOR_0_BASE, 4));
usleep(500000);

IOWR_32DIRECT(DATA_PATTERN_CHECKER_0_BASE, 4, PRBS31);
usleep(500000);
alt_printf("The value read from Checker is %x\n\n",
IORD_32DIRECT(DATA_PATTERN_CHECKER_0_BASE, 4));
usleep(500000);

alt_putstr("Enabling pattern generator...\n");
usleep(500000);

IOWR_32DIRECT(DATA_PATTERN_CHECKER_0_BASE, 0, ENABLE);
usleep(500000);
alt_printf("The value read from Checker is %x\n", IORD_32DIRECT(DATA_PATTERN_CHECKER_0_BASE,
0));
usleep(500000);

IOWR_32DIRECT(DATA_PATTERN_GENERATOR_0_BASE, 0, ENABLE);
usleep(500000);
alt_printf("The value read from Generator is %x\n\n",
IORD_32DIRECT(DATA_PATTERN_GENERATOR_0_BASE, 0));
usleep(500000);

return 0;
}
```

Terminal Output

```
Hello from Nios II!  
  
Begin configuration of Pattern Generator  
  
Setting pattern to PRBS31...  
The value read from Generator is 8  
The value read from Checker is 8  
  
Enabling pattern generator...  
The value read from Checker is 0  
The value read from Generator is 0  
  
End
```