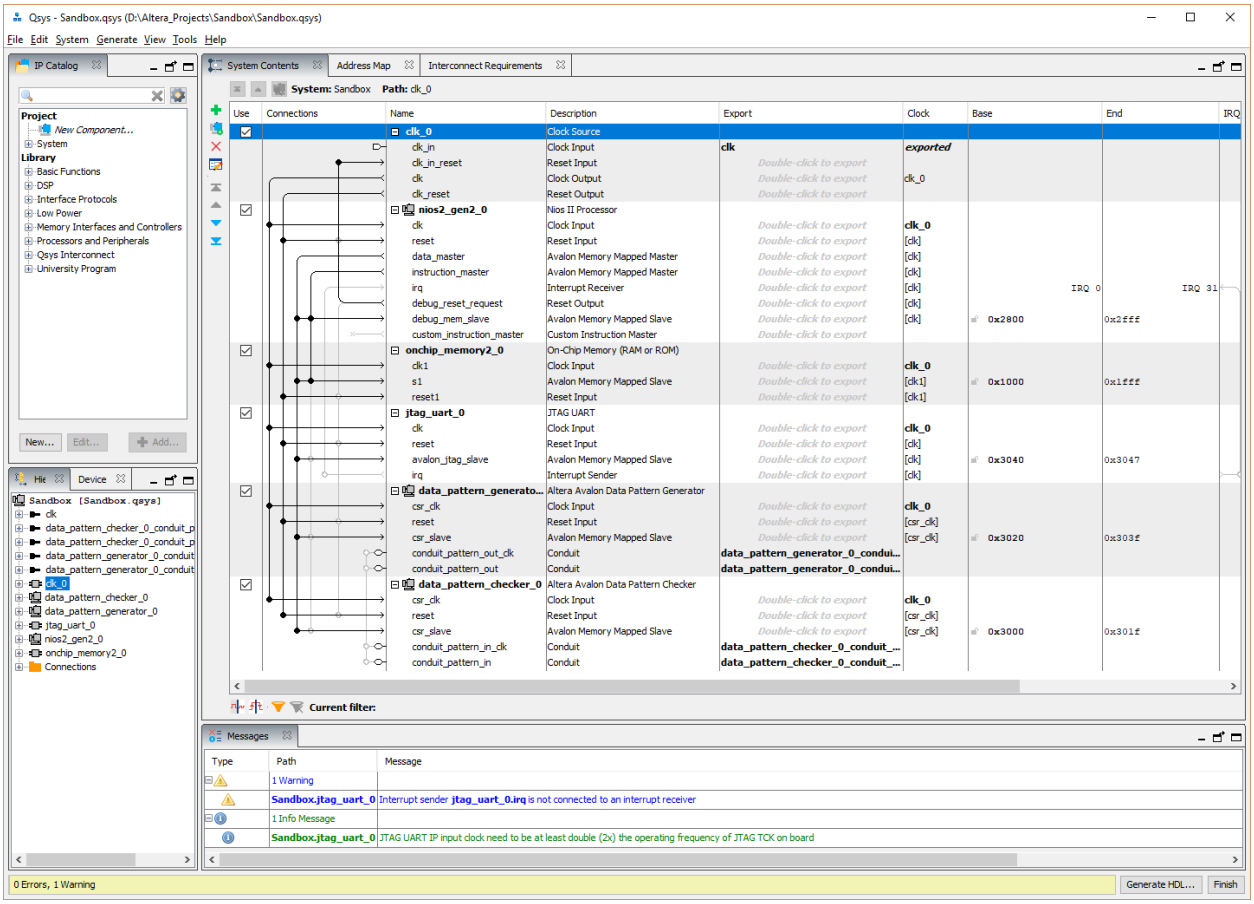
Qsys File



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
```