
SpartanMC

***Configurable Parallel Output for 1
to 18 Bit (port_out)***

Table of Contents

1. Module Parameters	1
2. Peripheral Registers	1
2.1. Output Port Register Description	1
2.2. PORT_OUT C-Header for Register Description	2

List of Figures

List of Tables

0 PORT_OUT module parameters	1
0 PORT_OUT registers	1

Configurable Parallel Output for 1 to 18 Bit (port_out)

The port output module provides up to 18 output signals. Each output pin can be activated through the corresponding bit in the control register PORT_OUT_OE. If an output is not activated it is set to high-impedance.

1. Module Parameters

Table 1: PORT_OUT module parameters

Parameter	Default Value	Description
BASE_ADR		Start address of the memory mapped peripheral registers. The value is taken as offset to the start address of the peripheral memory space. This parameter is set by jConfig automatically.
PORT_WIDTH	18	Number of output bits.

2. Peripheral Registers

2.1. Output Port Register Description

The output port peripheral provides two 18 bit registers which are mapped to the SpartanMC address space e.g. $0x1A000 + \text{BASE_ADR} + \text{Offset}$.

Table 2: PORT_OUT registers

Offset	Name	Access	Description
0	PIN_OUT_DAT	read/ write	Register for outgoing data.
1	PIN_OUT_OE	read/ write	If set to one the corresponding output pin in PIN_OUT_DAT is enabled. After system reset all PIN_BI_OE bits are initialized with zero.

2.2. PORT_OUT C-Header for Register Description

```
#ifndef __PORT_OUT_H
#define __PORT_OUT_H

#ifdef __cplusplus
extern "C" {
#endif

#define PORT_OUTBIT_0 (1<<0)
#define PORT_OUTBIT_1 (1<<1)
#define PORT_OUTBIT_2 (1<<2)
#define PORT_OUTBIT_3 (1<<3)
#define PORT_OUTBIT_4 (1<<4)
#define PORT_OUTBIT_5 (1<<5)
#define PORT_OUTBIT_6 (1<<6)
#define PORT_OUTBIT_7 (1<<7)
#define PORT_OUTBIT_8 (1<<8)
#define PORT_OUTBIT_9 (1<<9)
#define PORT_OUTBIT_10 (1<<10)
#define PORT_OUTBIT_11 (1<<11)
#define PORT_OUTBIT_12 (1<<12)
#define PORT_OUTBIT_13 (1<<13)
#define PORT_OUTBIT_14 (1<<14)
#define PORT_OUTBIT_15 (1<<15)
#define PORT_OUTBIT_16 (1<<16)
#define PORT_OUTBIT_17 (1<<17)

typedef struct port_out {
    volatile unsigned int data; // (r/w)
    volatile unsigned int oe; // (r/w)
} port_out_regs_t;

#ifdef __cplusplus
}
#endif

#endif
```