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**Lab 3 - SPI - "I/O" -- Mega Prelab**

**BoosterPack Interface**

| **Name** | **Pin #** | **Type** | **PxDIR** | **PxREN** | **PxOUT** |
| --- | --- | --- | --- | --- | --- |
| GND | 20 | Power |  |  |  |
| RST | 8 | Output | 1 | 0 | 1 |
| P1.4 | 6 | Output | 1 | 0 | 1 |
| MOSI | 15 | Output | 1 | 0 | 1 |
| SCLK | 7 | Output | 1 | 0 | 1 |
| VCC | 1 | Power |  |  |  |
| S1 | 9 | Input | 0 | 1 | X |
| S2 | 10 | Input | 0 | 1 | X |
| S3 | 11 | Input | 0 | 1 | X |
| S4 | 12 | Input | 0 | 1 | X |

**Missing Register Names**

| **Mystery Label** | **Register** |
| --- | --- |
| A | P1OUT |
| B | P1DIR |
| C | P2OUT |
| D | P2DIR |

**SPI Initialization**

| **ID** | **Bit** | **Function as set in the code** |
| --- | --- | --- |
| UCCKPH | 7 | Data captured on first UCLK edge, changed on following |
| UCMSB | 5 | MSB first |
| UCMST | 3 | Master mode |
| UCSYNCH | 0 | Synchronous mode |
| UCSSEL\_2 | 7-6 | SMCLK enabled |
| UCSWRST | 0 | Software reset enable |

**Setting Symbolic Constants**

| **Symbolic Constant** | **Hex** | **Function** |
| --- | --- | --- |
| #STE2007\_RESET | E2 | Internal reset |
| #STE2007\_DISPLAYALLPOINTSOFF | A4 | Normal Display |
| #STE2007\_POWERCONTROL | 28 | Power on (all else off) |
| #STE2007\_POWERCTRL\_ALL\_ON | 2F | Power on (booster/regulator/follower on) |
| #STE2007\_DISPLAYNORMAL | A6 | Normal LCD display |
| #STE2007\_DISPLAYON | AF | LCD display on |