Pmod SF3 Board Reference Manual

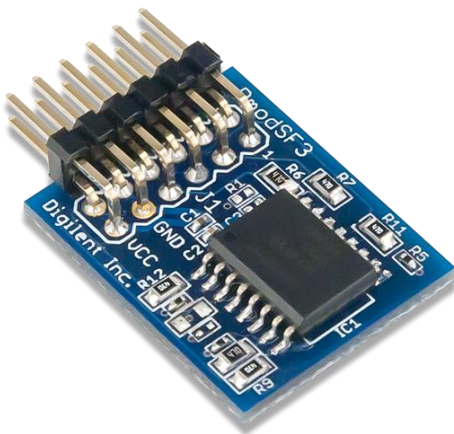**Revised October 5, 2016**
This manual applies to the Pmod SF3 rev. A

Overview

The Digilent Pmod SF3 (Revision A) provides 32MB of serial Flash Memory.

Features:

- 32MB serial NOR Flash Memory
- Supports extended SPI Protocol, Dual I/O, and Quad I/O
- Minimum 100,000 ERASE cycles per sector
- More than 20 years data retention
- 12-pin Pmod connector with SPI interface
- Follows Digilent Interface Specification Type 2A

The Pmod SF3.

1   Functional Description

The Pmod SF3 utilizes Micron's NOR Flash memory (N25Q256A) to provide easily accessed non-volatile memory to system boards. The data sheet can be found here.

2   Interfacing with the Pmod

The Pmod SF3 communicates with the host board via the SPI protocol. By bringing the Chip Select line logic level low voltage, users may issue a single byte instruction code to memory chip. A table of available commands can be found in the data sheet for the N25Q256A here starting on page 28.

The memory is byte-addressed with the range of 0x000000 to 0x1FFFFFF and is organized into 256 byte pages, 4 KB subsectors, and 64 KB sectors. The memory is written by using an Erase-Program cycle. The smallest programmable unit is one page and the smallest erasable unit is 1 subsector.

Users that wish to simply use the memory module without concerning themselves with the dual/quad input and output communication may use the example code and tutorials found on the Pmod SF3 Resource Center.

3   Pinout Description Table

Pin	Signal	Description	Pin	Signal	Description
1	~CS	Chip Select	7	NC	Not Connected
2	MOSI/DQ0	Master-Out-Slave-In	8	NC	Not Connected
3	MISO/DQ1	Master-In-Slave-Out	9	W/DQ2	Write Protect
4	SCK	Serial Clock	10	HLD/DQ3	Hold
5	GND	Power Supply Ground	11	GND	Power Supply Ground
6	VCC	Power Supply (3.3V)	12	VCC	Power Supply (3.3V)

Any external power applied to the Pmod SF3 must be within 2.31V and 3.7V; it is strongly recommended the Pmod is operated at 3.3V. Bottom of Form

4   Physical Dimensions

The pins on the pin header are spaced 100 mil apart. The PCB is 1 inch long on the sides parallel to the pins on the pin header and 0.8 inches long on the sides perpendicular to the pin header.

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