

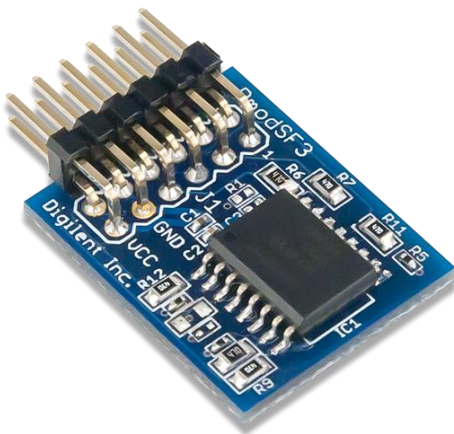
Pmod SF3 Board Reference Manual

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.



The Pmod SF3.

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

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

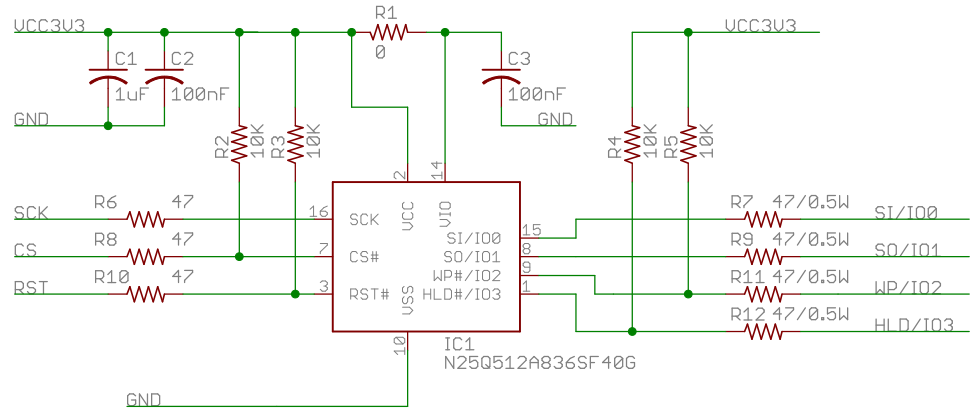
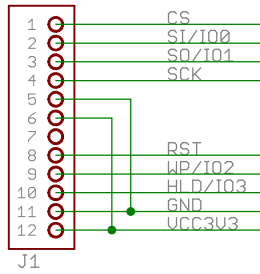
Pin	Signal	Description	Pin	Signal	Description
1	~CS	Chip Select	7	NC	Not Connected
2	MOSI/DQ0	Master-Out-Slave-In	8	NC	Not Connected
3	MISO/DQ1	Master-In-Slave-Out	9	W/DQ2	Write Protect
4	SCK	Serial Clock	10	HLD/DQ3	Hold
5	GND	Power Supply Ground	11	GND	Power Supply Ground
6	VCC	Power Supply (3.3V)	12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

Pmod Header



CE

WEEE

ROHS CHINA

NOTE: R1 and C3 are loaded for IC1 = S25FL512S and not loaded for IC1 = N25Q512A

Digilent PmodSF3		Engineer: MTA
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