

## PmodSSD™ Reference Manual

Revised May 24, 2016

This manual applies to the PmodSSD rev. A

### Overview

The PmodSSD is a two-digit seven-segment display. Users can toggle through GPIO signals which digit is currently on at a rate of 50Hz or greater to achieve persistence-of-vision to give the effect of both digits being lit up simultaneously.



The PmodSSD.

Features include:

- Two-digit high brightness seven-segment display
- Easily view a counter or timer
- Common Cathode configuration
- Small PCB size for flexible designs 1.0" × 1.7" (2.5 cm × 4.3 cm)
- Two 6-pin Pmod connectors with GPIO interfaces
- Follows [Digilent Pmod Interface Specification](#) Type 1

## 1 Functional Description

The PmodSSD utilizes a common cathode configuration to display a variety of LED segment combinations. The ten segment combinations corresponding to digits 0 - 9 are generally the most useful, although other custom combinations can also be created.

## 2 Interfacing with the Pmod

The PmodSSD communicates with the host board via the GPIO protocol. A logic level high signal on a particular anode will light up that respective segment on whichever digit is currently enabled. Users are able to select a particular digit by driving the Digit Selection pin (C) to a logic high or low voltage.

Because only one digit can be lit at a particular time, users that want to use both digits to display a particular value will need to alternately light up the two digits at least every 20 milliseconds (50 Hz). This will correlate to each digit being lit up for 10 milliseconds each before the other segment needs to be “turned on”. Higher refresh rates can be achieved by alternating which digit is currently powered at shorter time intervals.

Header J1			Header J2		
Pin	Signal	Description	Pin	Signal	Description
1	AA	Segment A	1	AE	Segment E
2	AB	Segment B	2	AF	Segment F
3	AC	Segment C	3	AG	Segment G
4	AD	Segment D	4	C	Digit Selection pin
5	GND	Power Supply Ground	5	GND	Power Supply Ground
6	VCC	Positive Power Supply	6	VCC	Positive Power Supply

Table 1. Pinout description table.

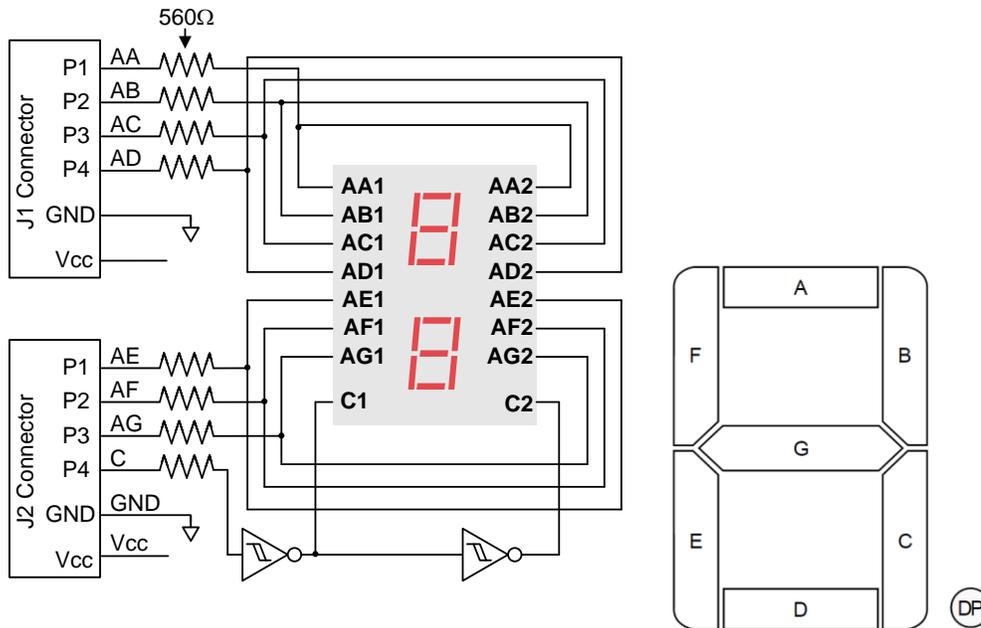


Figure 1. Seven-segment display connection diagram.

Any external power applied to the PmodSSD must be within 2.7V and 5.25V; however, it is recommended that Pmod is operated at 3.3V.

### 3 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 1.7 inches long on the sides perpendicular to the pin header.

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