



SYCARD
TECHNOLOGY

SMextend 750 SmartMedia Extender User's Manual

Preliminary

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1.0 Introduction

Sycard Technology's SMextend 750 SmartMedia (SSFDC) extender card is a debug tool for SmartMedia development and test. SMextend offers the following features:

- Supports 3.3, 5V or dual voltage hosts
- Configurable for 3.3V or 5V operation
- 4 layer construction to insure low noise environment
- All 22 pins available as test points
- Signals clearly marked
- Vcc can be isolated through jumper blocks for current measurements
- Surface mount resistors can be added to any signal line
- Vcc LEDs indicate 3.3V or 5V operation
- Convenient grounding posts for scope probes or other test equipment

2.0 Using the SMextend 750

The SMextend 750 must be configured for 3.3, 5.0, or dual voltage operation prior to use. Section 2.1 describes the procedure for first time setup.

Caution: Insertion and removal of the extender and SmartMedia card should be done with care. The SmartMedia's fragile connectors may be broken or bent if improper force is used. Both card and extender should be inserted straight without any lateral movement or force. Proper care and use of the extender card will insure years of trouble free operation.

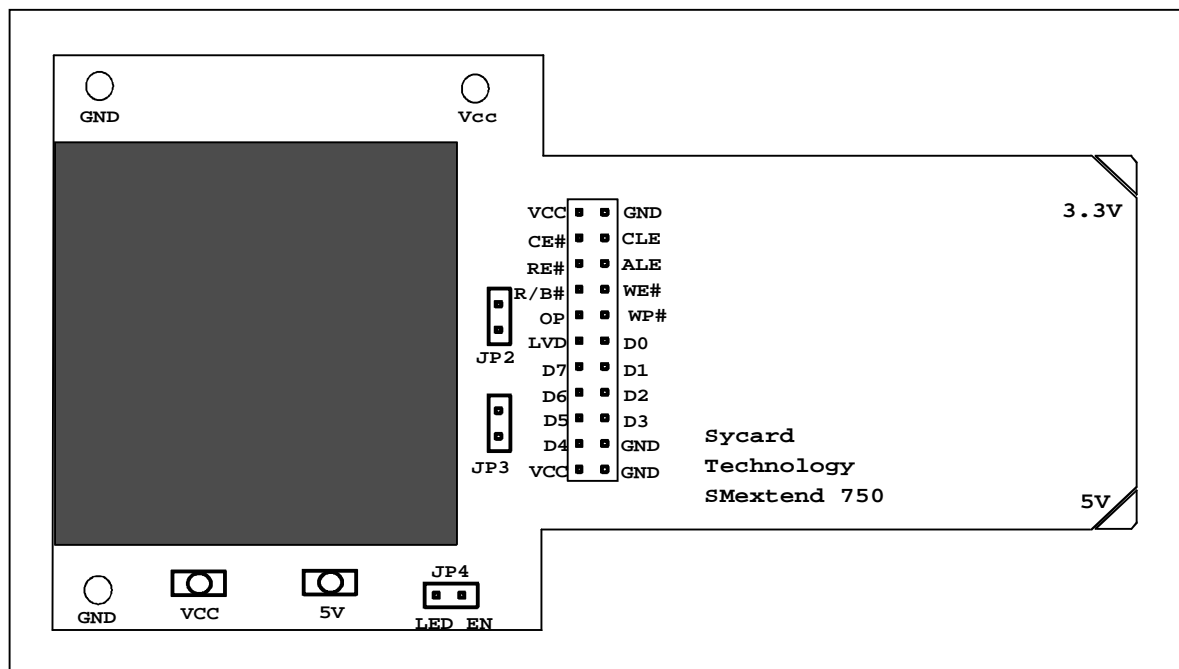


Figure 2.0-1 The SMextend 750

2.1 Preparing the SMextend 750 for use

As shipped from the factory the SMextend 750 is configured with voltage keys disabled. In this condition, the SMextend may not be accepted into many SmartMedia sockets. The SmartMedia standard defines two voltage keys, one for 3.3V and one for 5V. 3.3V only cards have a cutout corner adjacent to pin 22 of the connector. 5V only cards have a cutout adjacent to pin 12. Cards that can operate at both 3.3V and 5V have both cutouts. The following section describes how to configure the SMextend for the desired operating voltage.

2.1.1 Removing the voltage key.

The 3V key should be removed if the card is to be used in a 3.3V host. The 5V key should be removed for 5V hosts. The voltage key can be removed with a small pair of pliers or a wire cutter. The SMextend 750 PCB is scored along the proper cut marks. After the user removes the keys, it may be necessary to clean the freshly cut edge of the board with a small file. Some sockets may not accept the SMextend 750 if these edges are not smooth.

Note: *Once removed, the voltage keys cannot be reattached.*

2.2 Using the SMextend

Use of the SMextend 750 is fairly straightforward. The SMextend is inserted into the host socket with the connector pattern in the correct orientation. The SmartMedia card is then inserted, with the connector pattern facing down, into SMextend 750's socket.

Caution: *The SMextend socket is keyed to accept both 3.3V and 5V SmartMedia cards. This configuration could allow a 3.3V only card to be plugged into a 5V host causing damage to either the card or the host. The user should verify compatibility by first trying to inserting the SmartMedia card into the host prior to using the extender card.*

2.3 Test points

All 22-pins of the interface are available to probe through clearly marked headers. The headers are standard 0.1" dual row headers with 0.025" posts designed to accept a wide variety of test probes and cable assemblies.

2.4 Power Indicators

Two LED power indicators display the status of the socket's Vcc. The PWR LED indicates that power is applied to the board. When both the PWR LED and the 5V LED are lit, a Vcc of greater than approximately 3.5V is present. When only the PWR LED is lit, the Vcc is at a level of less than 3.5V.

Note: *The power LEDs are designed to indicate the presence of power on the Vcc supply pins. The LEDs do not provide an accurate measurement of Vcc. Use a voltmeter to determine the actual operating voltage.*

In some low power applications, the current drawn by the power LEDs (10-20mA) may cause problems. The SMextend is capable of disabling the LED voltage indication by removing the jumper labeled LED EN at JP4.

2.5 Current Measurements

The Vcc power bus may be isolated from the SmartMedia Card socket through two jumper blocks labeled JP2 and JP3. Both jumpers must be removed to isolate the power. A current meter can be inserted to measure card current consumption.

Caution: *Care must be taken to insure that the current measuring device is inserted before turning on power to the host socket. Improper power sequencing may cause a damaging latchup condition.*

2.6 Termination Area

An area with SMT resistors is located between the test points and the card connector allows access to all SmartMedia signals. A series of surface mount pads allows the user to isolate a signal by cutting a trace. The user may also add series resistors to any signal.

When shipped from the factory, the resistor pads are shorted with PCB traces. In order to insert series resistor, these traces must be cut prior to soldering the resistor to the board. Figure 2.3-1 illustrate the termination areas located on the back of the SMextend board. Use this guide when making modifications to the board, since the silk-screen designations may be difficult to read.

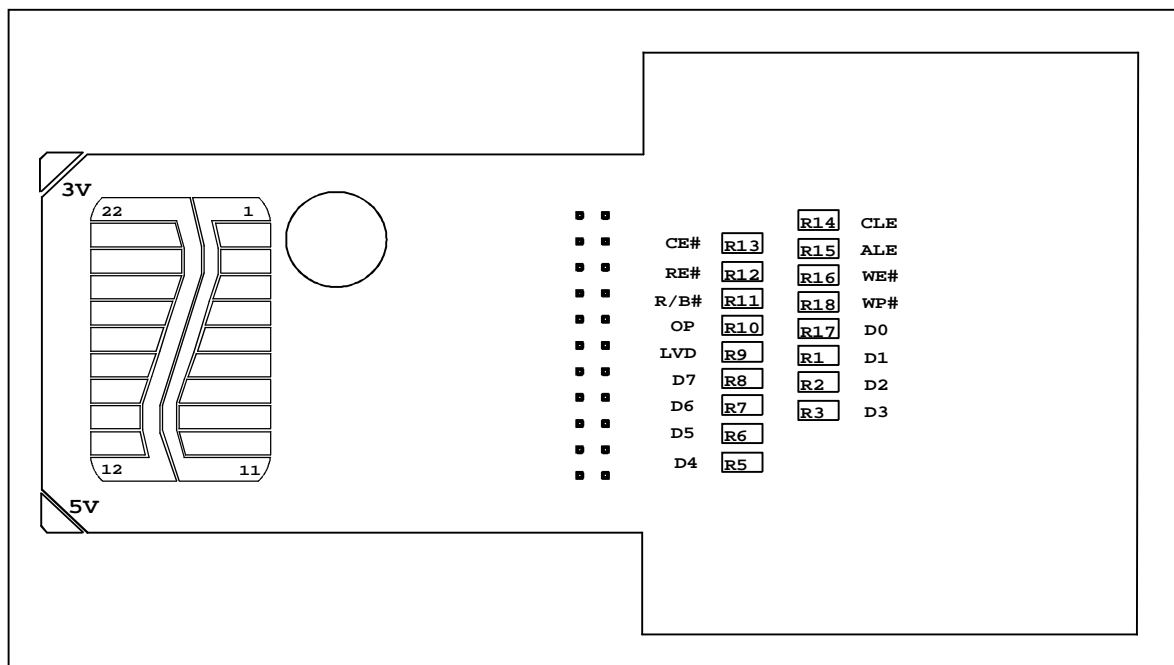


Figure 2.6-1 Termination Area - Solder Side

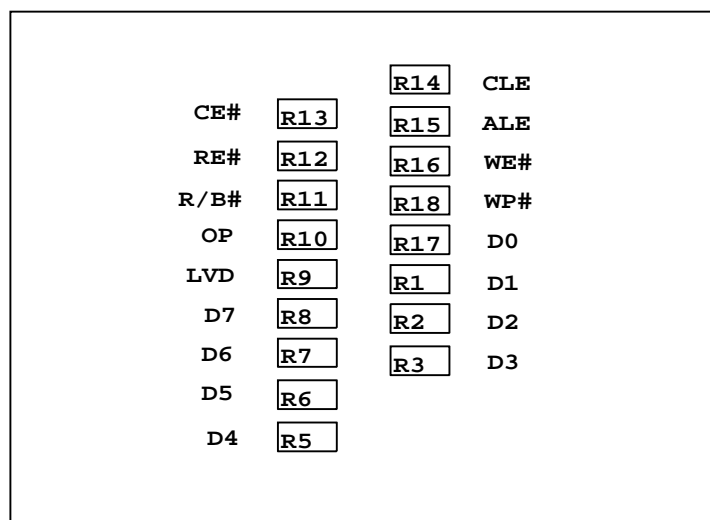
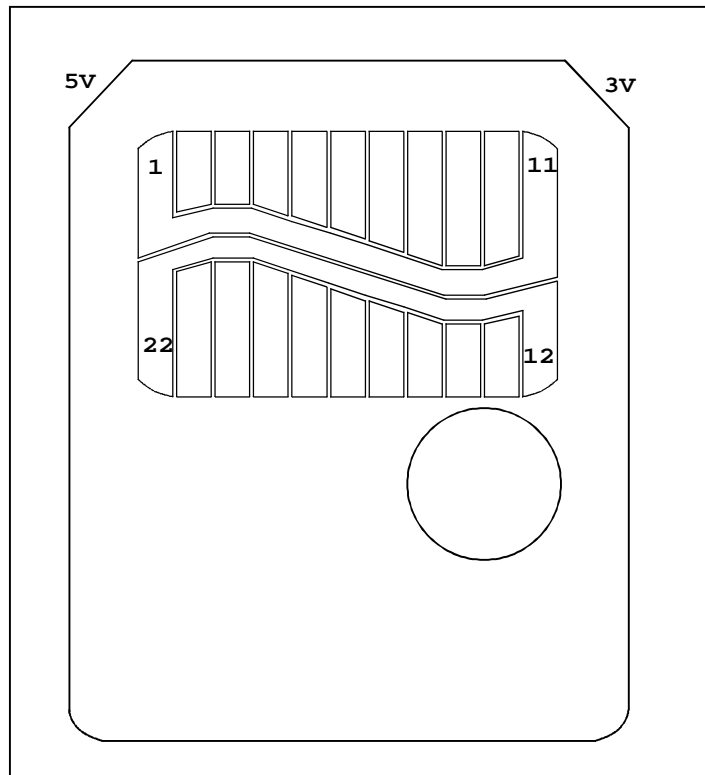


Figure 2.6-2 Termination Area - Close-up

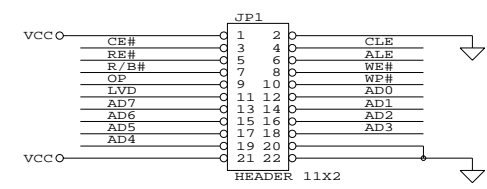
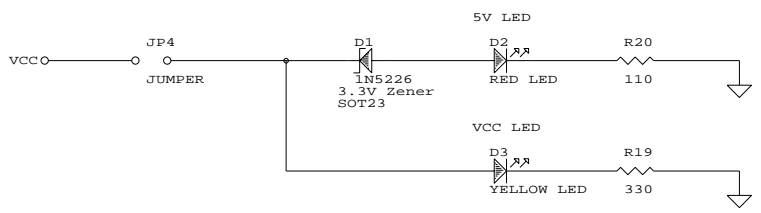
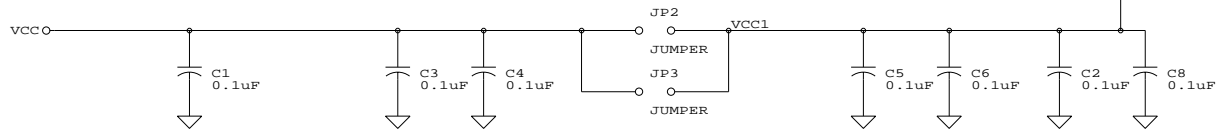
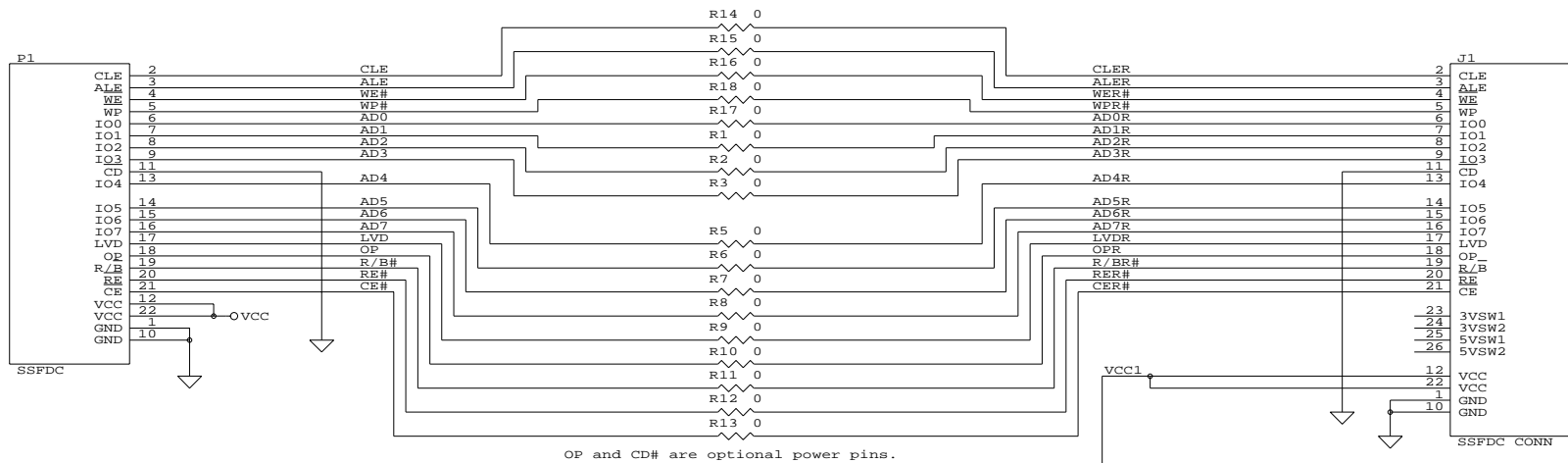
Appendix

A. SmartMedia Pin Description

Pin	Name	Description	Pin	Name	Description
1	Vss	Ground	12	Vcc	Power
2	CLE	Command Latch Enable	13	D4	Address/Data Bit 4
3	ALE	Address Latch Enable	14	D5	Address/Data Bit 5
4	WE#	Write Enable	15	D6	Address/Data Bit 6
5	WP#	Write Protect	16	D7	Address/Data Bit 7
6	D0	Address/Data Bit 0	17	LVD	Low Voltage Detect
7	D1	Address/Data Bit 1	18	GND	Ground
8	D2	Address/Data Bit 2	19	R/B#	Ready / Busy#
9	D3	Address/Data Bit 3	20	RE#	Read Enable
10	Vss	Ground	21	CE#	Card Enable
11	Vss	Ground / Card Detect	22	Vcc	Power



B. SMextend 750 Schematic



Sycard Technology		
Title		
SSFDC EXTENDER		
Size	Document Number	REV
B	140031	A
Date:	May 22, 1998	Sheet 1 of 1