



SYCARD
TECHNOLOGY

CFextend 165 CompactFlash to PC Card Extender User's Manual

Preliminary

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1.0 Introduction

Sycard Technology's CFextend 165 CompactFlash to PC Card-16 extender card allows a standard 68-pin PC Card-16 card to be plugged into a 50-pin CompactFlash socket. The major use of this product is for companies to test their PC Card products prior to converting them over to the CompactFlash form factor.

- Push button switches simulates card removal/insertion cycle
- Low profile enclosure compatible with all CompactFlash hosts
- 4 layer construction to insure low noise environment
- All 50 pins available as test points
- Both I/O and memory mode signals clearly marked
- Vcc can be isolated through jumper blocks for current measurements
- Surface mount resistors can be added to any signal line
- Current protection device protects host from Vcc to ground shorts
- Vcc LEDs indicate 3.3V or 5V operation
- Convenient grounding posts for scope probes or other test equipment

2.0 Using the CFextend 165

Using the CFextend 165 is relatively straightforward. The extender card is inserted into the desired slot in the host system. Then the 68 pin PC-Card 16 is inserted into the card connector.

Caution: Insertion and removal of the extender and PC Card should be done with care. The CF Card'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.

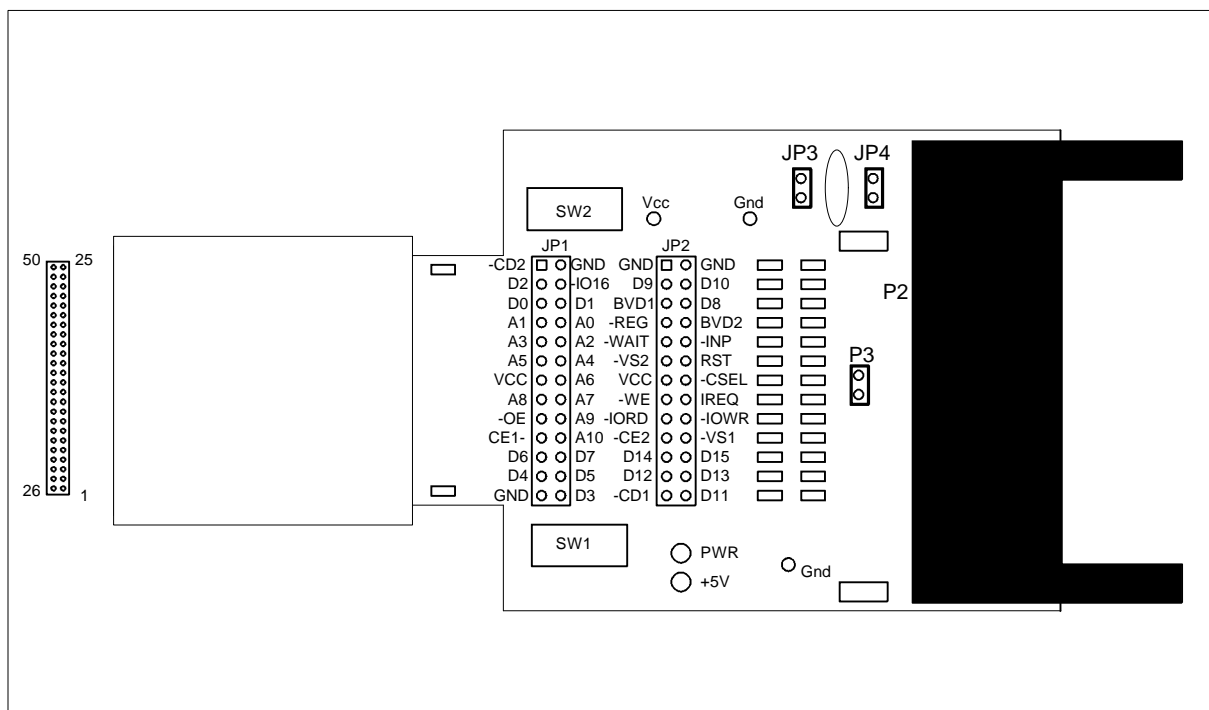


Figure 2.0-1 The CFextend 165

2.1 The CompactFlash to PC Card-16 Interface

The CFextend 165 allows the user to test a PC Card-16 device in a CompactFlash socket. Since the CompactFlash interface is a subset of the PC Card-16 interface, it is expected that many PC Cards will not operate in a CF environment. The following table outlines the differences between the CompactFlash and PC Card-16 interface and how the extender handles the differences.

CompactFlash Signal	PC Card-16 Signal	Notes
A[10:0]	A[10:0]	
N.A.	A[25:11]	Resistor pull-down on 68 pin socket
D[15:0]	D[15:0]	
CE[2:1]	CE[2:1]	
VS[2:1]	VS[2:1]	
REG#	REG#	
WE#	WE#	
OE#	OE#	
BVD[2:1]	BVD[2:1]	
RDY/IRQ	RDY/IRQ	
IORD#	IORD#	
IOWR#	IOWR#	
RESET	RESET	
INP#	INP#	
#CD[2:1]	#CD[2:1]	SW1 and SW2 momentarily isolates #CD1 and #CD2
WAIT#	WAIT#	
WP/IO16#	WP/IO16#	
N.A.	Vpp1	Connected to P3-1
N.A.	Vpp2	Connected to P3-2
CSEL#	N.A.	Connected to JP2 only
VCC	VCC	Over-current protected with polyfuse device. Can be isolated via JP3.
GND	GND	

2.2 Test points

All 50-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. The test points are clearly labeled with the CompactFlash signal designations.

2.3 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.

2.4 Current Measurements

The Vcc power bus may be isolated from the PC Card-16 socket through the jumper block labeled JP3. A current meter can be inserted to measure card current consumption. For critical power measurements, it may be desirable to disable the current protection device (V1). V1 may be taken out of the circuit by installing JP4.

***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.*

2.5 Using the Card Detect switches

CFextend 165 includes two micro switches (SW1 and SW2) which can be used to momentarily interrupt the CD1- and CD2- signals. By interrupting the CD1- and CD2- signals, a card removal/insertion cycle can be simulated.

To test the operation of the Card Detect switches, be sure that your CF Card Software drivers are loaded. Momentarily press both of the Card Detect switches. Most software drivers will issue a removal beep followed by an insertion beep. The software may also remove power from the socket when the card is removed.

2.6 Termination Area

An area with SMT resistors is located between the test points and the PC Card-16 connector. These resistor pads allow access to all CF Card signals. By cutting the shorting trace on each one of these resistor pads, the user can isolate a signal. 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 2.4-1 and 2.4-2 illustrate the termination areas located on both sides of the CFextend board. Use this guide when making modifications to the board, since the silk-screen designations may be difficult to read.

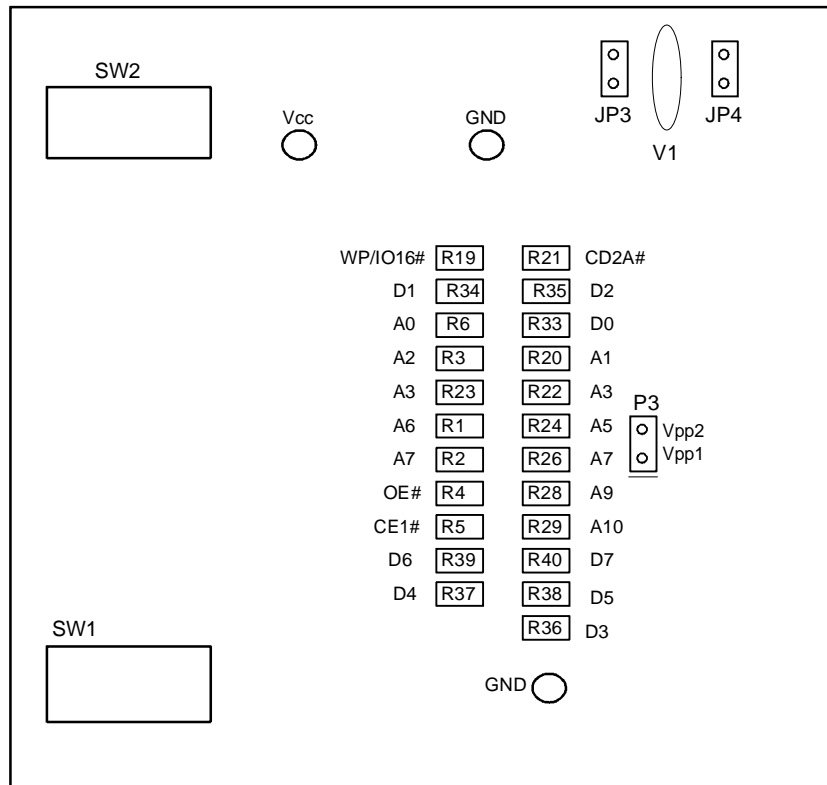


Figure 2.4-1 Termination Area - Component Side

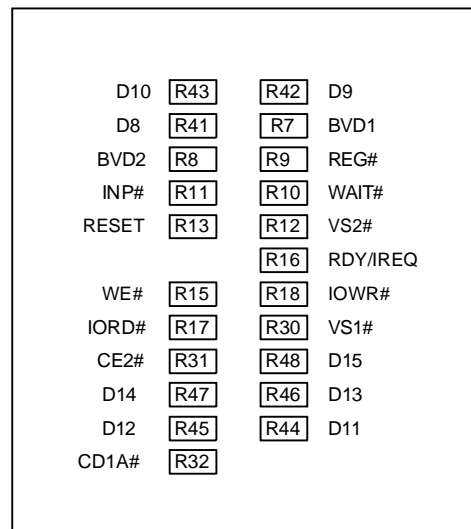


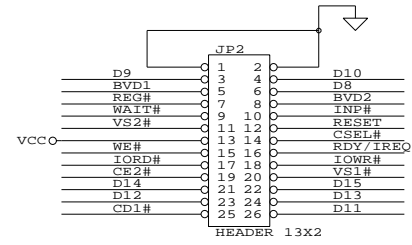
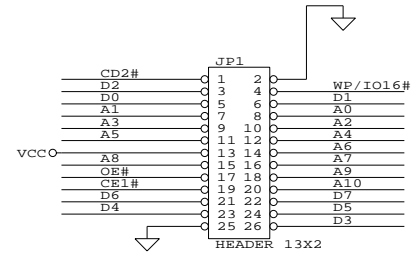
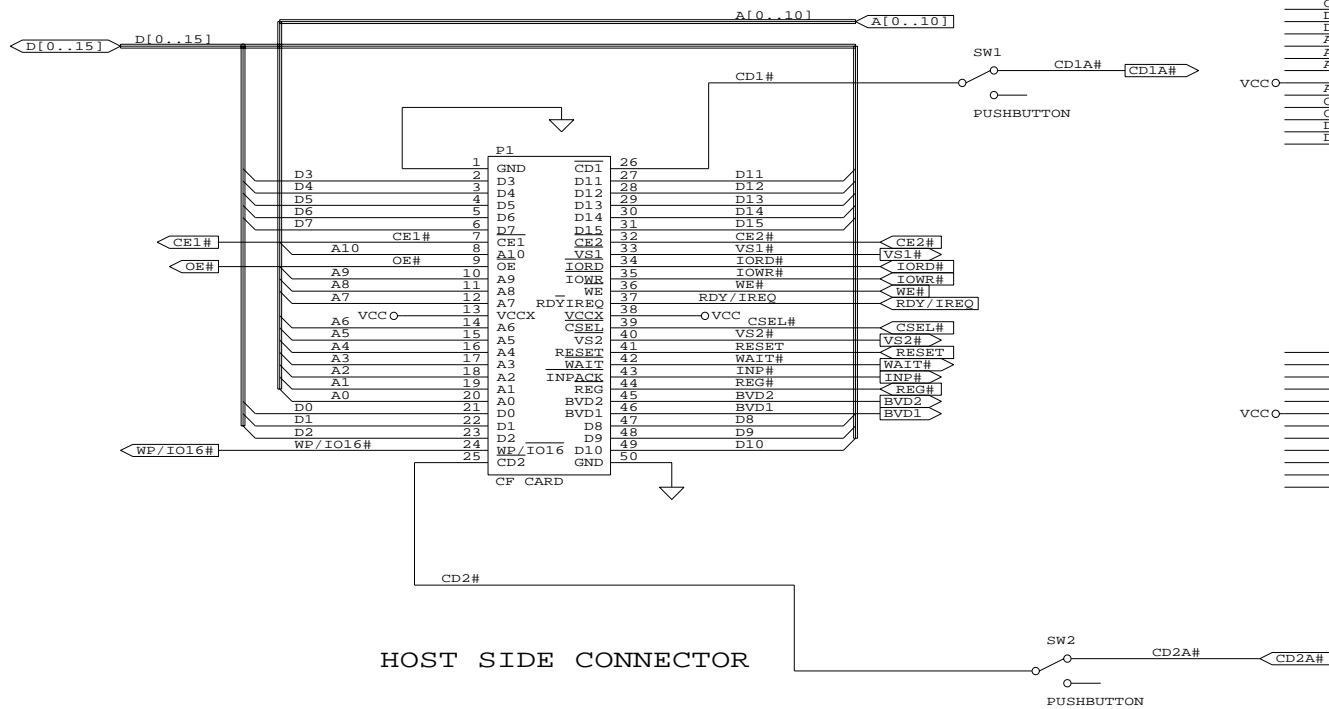
Figure 2.4-2 Termination Area - Solder Side

Appendix A

A. CompactFlash 50-Pin Interface

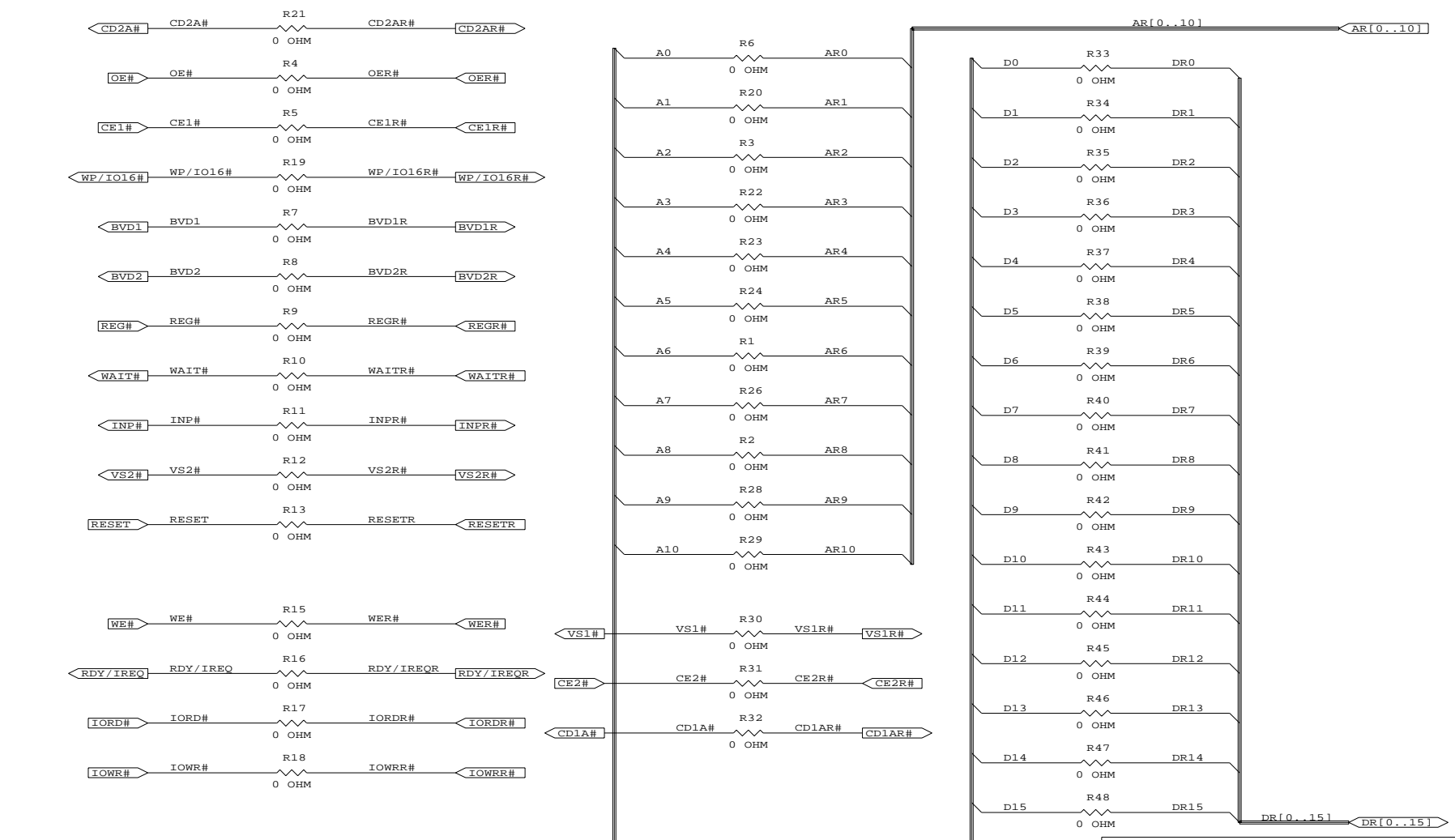
Pin	Name	Description	Pin	Name	Description
1	GND	Ground	26	CD1#	Card Detect 1
2	D03	Data Bit 3	27	D11	Data Bit 11
3	D04	Data Bit 4	28	D12	Data Bit 12
4	D05	Data Bit 5	29	D13	Data Bit 13
5	D06	Data Bit 6	30	D14	Data Bit 14
6	D07	Data Bit 7	31	D15	Data Bit 15
7	CE1#	Card Enable 1	32	CE2#	Card Enable 2
8	A10	Address Bit 10	33	VS1#	Voltage Sense 1
9	OE#	Output Enable	34	IORD#	I/O Read Strobe
10	A09	Address Bit 9	35	IOWR#	I/O Write Strobe
11	A08	Address Bit 8	36	WE#	Write Enable
12	A07	Address Bit 7	37	RDY/BSY/IREQ	Ready/Busy/Interrupt Request
13	VCC	Card Power	38	VCC	Card Power
14	A06	Address Bit 6	39	CSEL#	Master Slave Select
15	A05	Address Bit 5	40	VS2#	Voltage Sense 2
16	A04	Address Bit 4	41	RESET	Card Reset
17	A03	Address Bit 3	42	WAIT#	Extend Bus Cycle
18	A02	Address Bit 2	43	INPACK#	Input Port Acknowledge
19	A01	Address Bit 1	44	REG#	Register Select
20	A00	Address Bit 0	45	BVD2	Battery Voltage Detect 2
21	D00	Data Bit 0	46	BVD1	Battery Voltage Detect 1
22	D01	Data Bit 1	47	D08	Data Bit 8
23	D02	Data Bit 2	48	D09	Data Bit 9
24	WP/IOIS16	Write Protect I/O is 16 Bits	49	D10	Data Bit 10
25	CD2#	Card Detect 2	50	GND	Ground

B. CFextend 165 Schematic

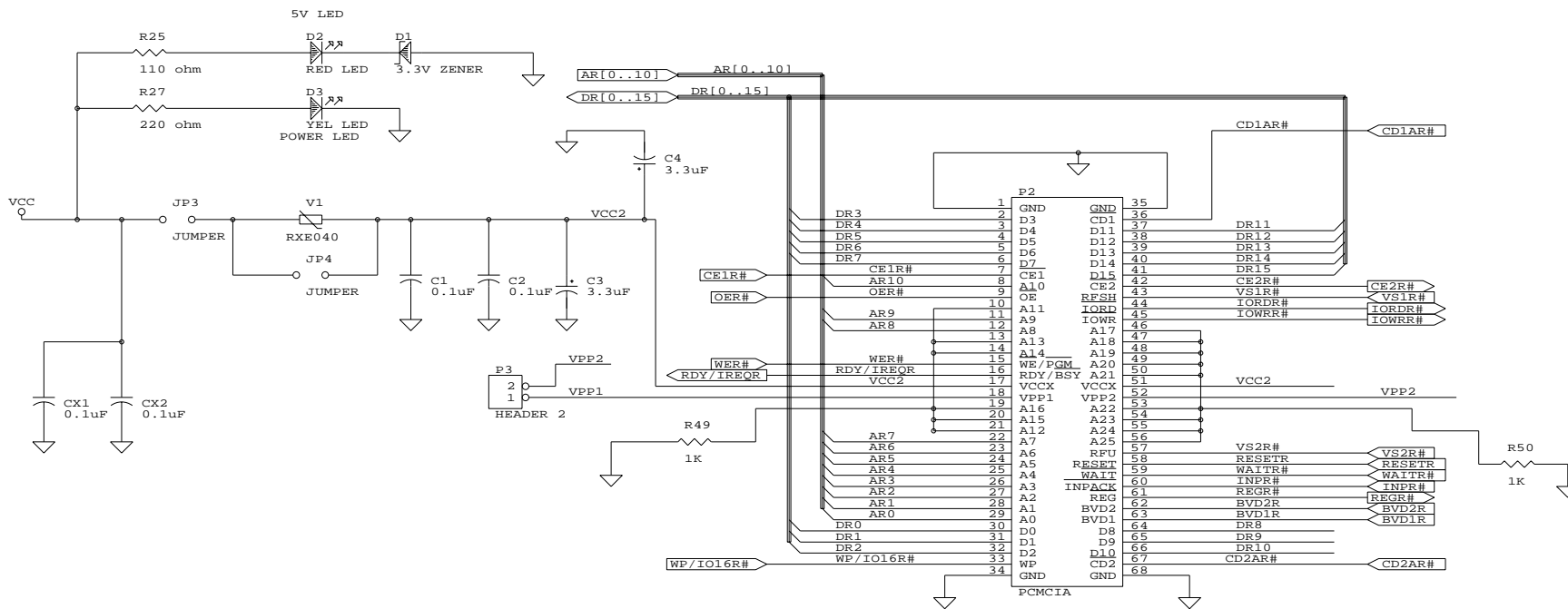


HOST SIDE CONNECTOR

Sycard Technology		
Title CFextend 165 - Host Connector		
Size	Document Number	REV
B	140028	A
Date:	May 28, 1998	Sheet 1 of 3



Sycard Technology		
Title CFextend 165 - Series Resistors		
Size	Document Number	REV
B	140028	A
Date:	May 28, 1998	Sheet 2 of 3



SOCKET SIDE CONNECTOR

Sycard Technology		
Title CFextend 165 - Card Side		
Size	Document Number	REV
B	140028	A
Date:	May 28, 1998	Sheet 3 of 3