



**SYCARD**  
TECHNOLOGY

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# ***PCCextend 140 CardBus Extender User's Manual***

*Preliminary*

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## 1.0 Introduction

Sycard Technology's PCCextend 140 CardBus extender card is a debug tool for development and test of PC cards and hosts. PCCextend offers the following features:

- PCCswitch simulates card removal/insertion cycle
- Low profile design compatible with type I, II and III sockets
- 6-layer construction to insure a low noise environment
- All 68 pins available as test points
- 32-bit CardBus signals clearly marked
- Vcc can be isolated through jumper blocks for current measurements
- Surface mount components can be added in series to any signal line
- Vcc LEDs indicate 3.3V or 5V operation
- Convenient grounding posts for scope probes or other test equipment
- Includes plastic overlay with 16-bit and Zoomed Video signals
- Optional HP Logic Analyzer Adapter (PCCextend 145) available.

## 2.0 Using the PCCextend 140

Using the PCCextend is relatively straightforward. The extender card is inserted into the desired slot in the host system. Then the PC Card under test is inserted into the card connector.

**Caution:** *Insertion and removal of the extender and PC card should be done with care. The PC Cards 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.*

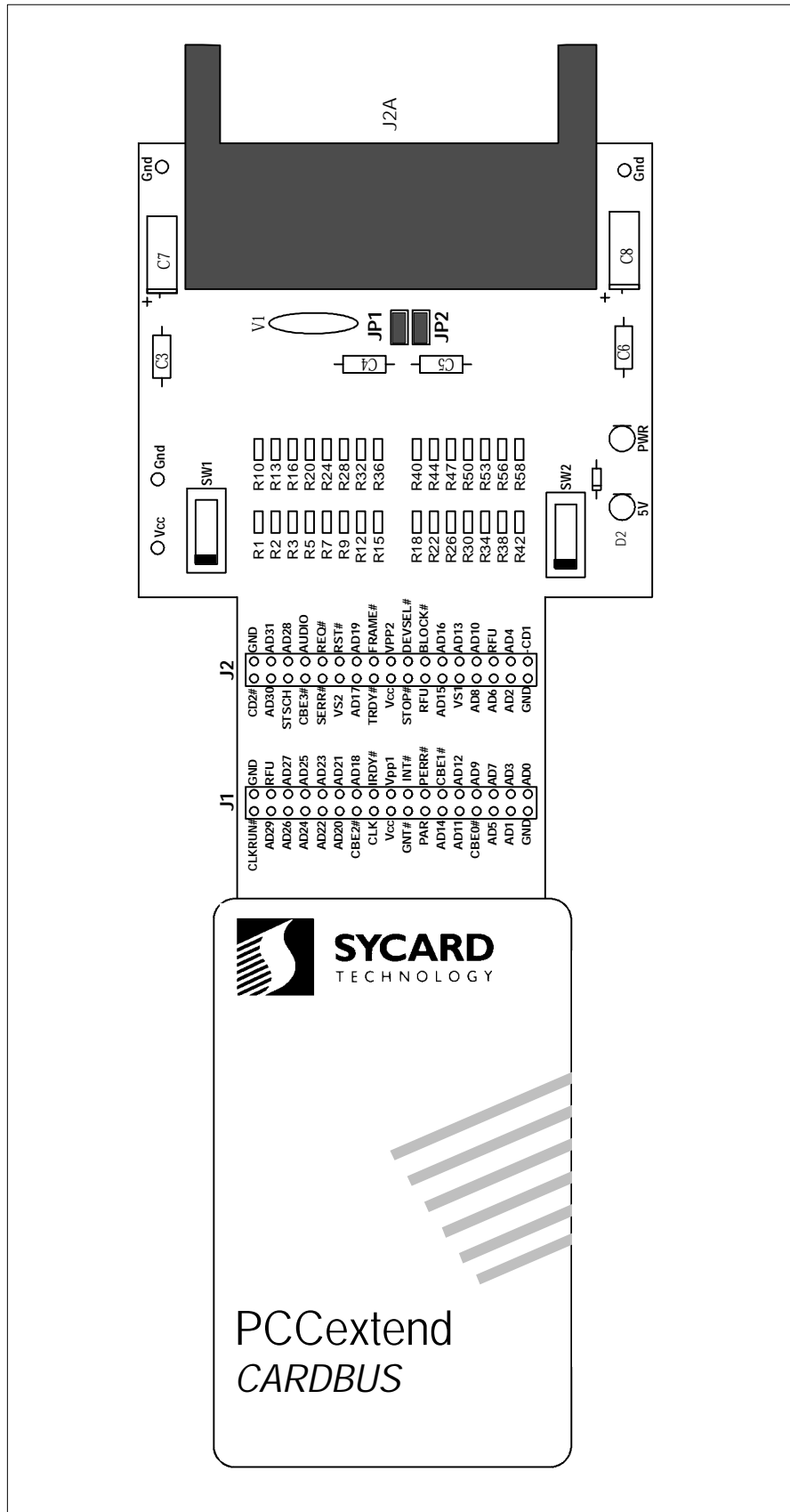
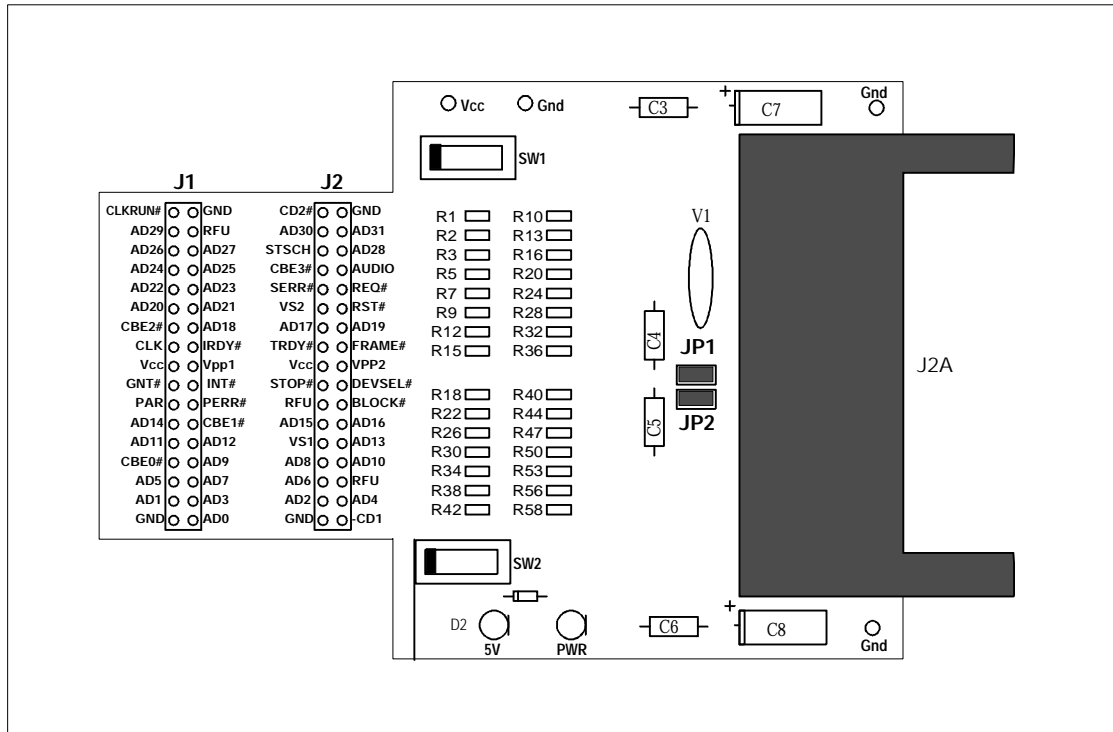


Figure 2.0-1 The PCCextend 140

## 2.1 Test points

All 68 pins of the interface are available to probe through clearly marked headers. In addition, two ground posts can be used to ground scope or logic analyzer probes. An optional HP logic analyzer adapter (PCCextend 145) can be connected to the test points for direct interface to HP logic analyzers.



## 2.2 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.

## 2.2 Current Measurements

The Vcc power bus may be isolated from the PC Card socket through two jumper blocks. Both jumpers must be removed to isolate the power. A current meter can be inserted to measure a card's 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.

## 2.3 Using the PCCswap Switch

PCCextend 140 includes two PCCswap switches which can be used to momentarily interrupt the CCD1# and CCD2# signals. The switches are located on both sides of the termination area. The PCCswap switch can interrupt the card detect signals (CCD1# and CCD2#) to simulate a card removal/insertion cycle. When a card is inserted, #CCD1 and #CCD2 may be momentarily interrupted by pressing the PCCswitch. To test the operation of the PCCswap switch, be

sure that the PC Card Software drivers are loaded. Momentarily press both PCCswap switches simultaneously. Most software drivers will issue a removal beep followed by an insertion beep. The host socket controller may remove power when it detects that card detects have been removed.

## 2.4 Series Termination Area

A series termination area located between the test points and the card connector allows access to all PC Card signals. A series of surface mount pads allows the user to add series resistors to any signal. The SMT pads are arranged as follows:

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. Figures 2.4-1 and 2.4-2 illustrate the termination areas located on both sides of the PCCextend board. Use this guide when making modifications to the board since the silk-screen designations may be difficult to read.

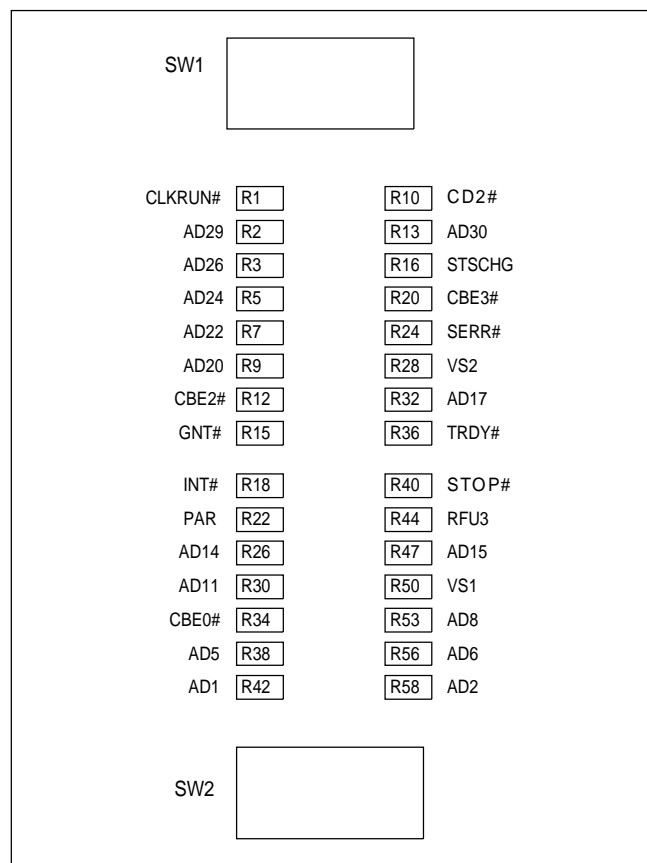


Figure 2.4-1 Termination Area - Component Side

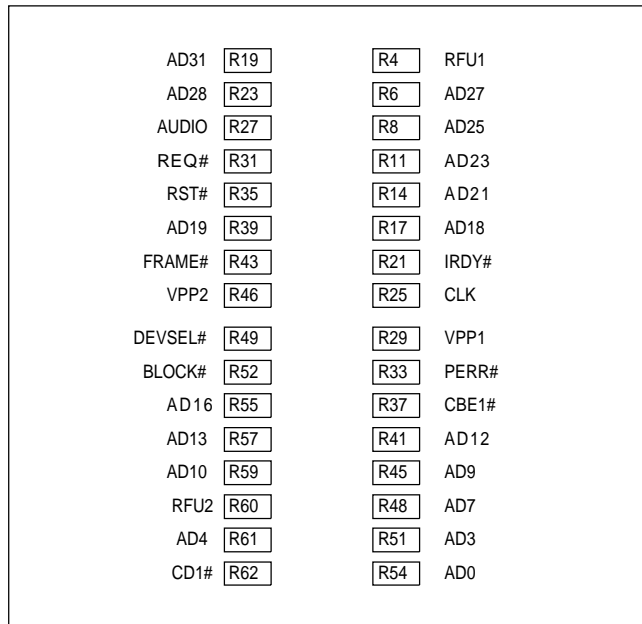


Figure 2.4-2 Termination Area - Solder Side

## 2.5 PCCextend Current Protection Device

A resettable fuse protects the host from excessive current consumption from the card. Located at V1, a Raychem PolySwitch resettable fuse provides low resistance operation up to 900mA.

## 2.6 16 Bit/Zoomed Video Overlay

Included with the PCCextend 140 is a plastic overlay with 16-bit and Zoomed Video signal description. The overlay is designed to be placed over the two 34 pin test point areas.

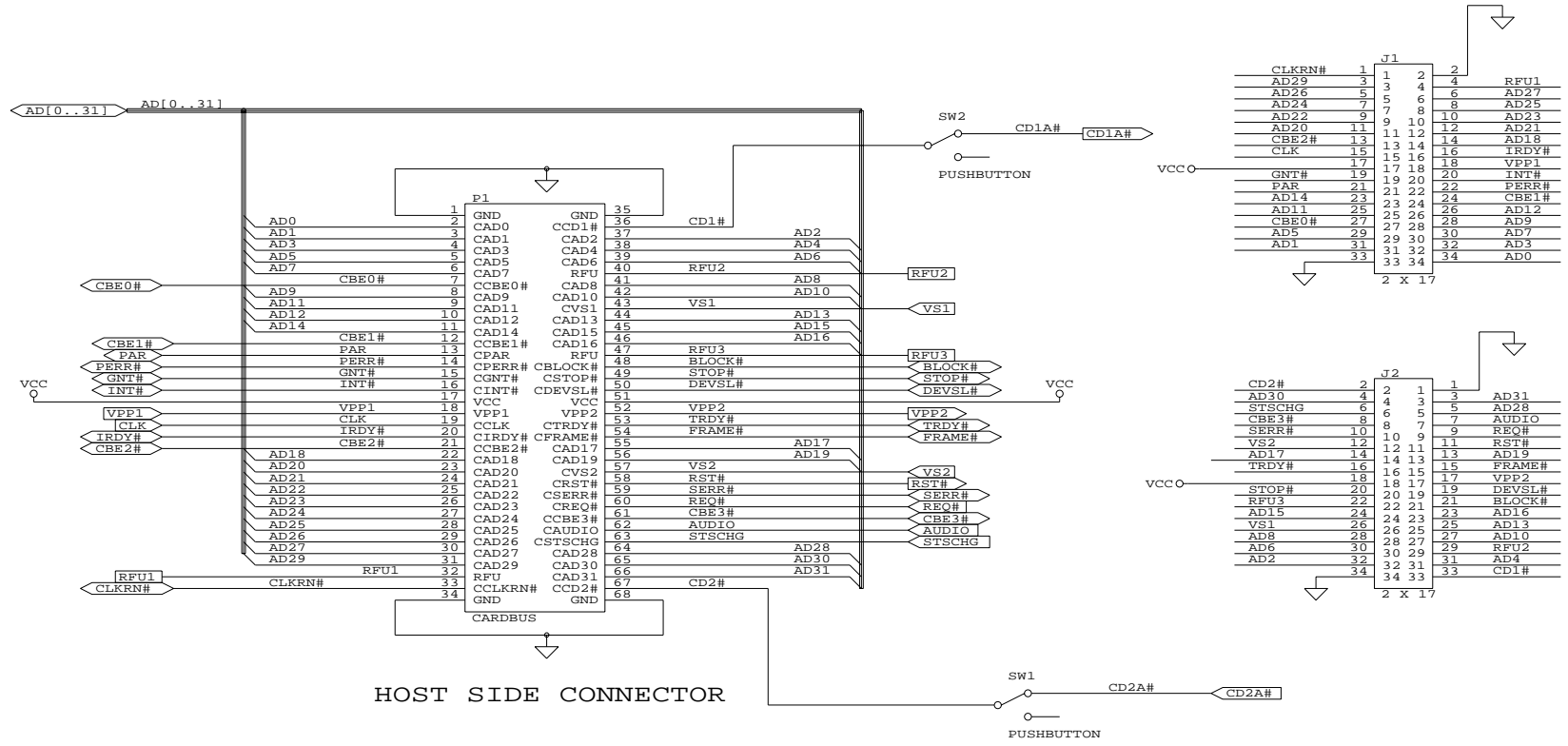
## 2.7 Optional Hewlett Packard Logic Analyzer Adapter

An optional HP Logic analyzer adapter (PCCextend 145) facilitates connection to the 16500, 1650 and 1660 series of logic analyzers. Contact Sycard Technology for pricing and availability.

## ***Appendix***

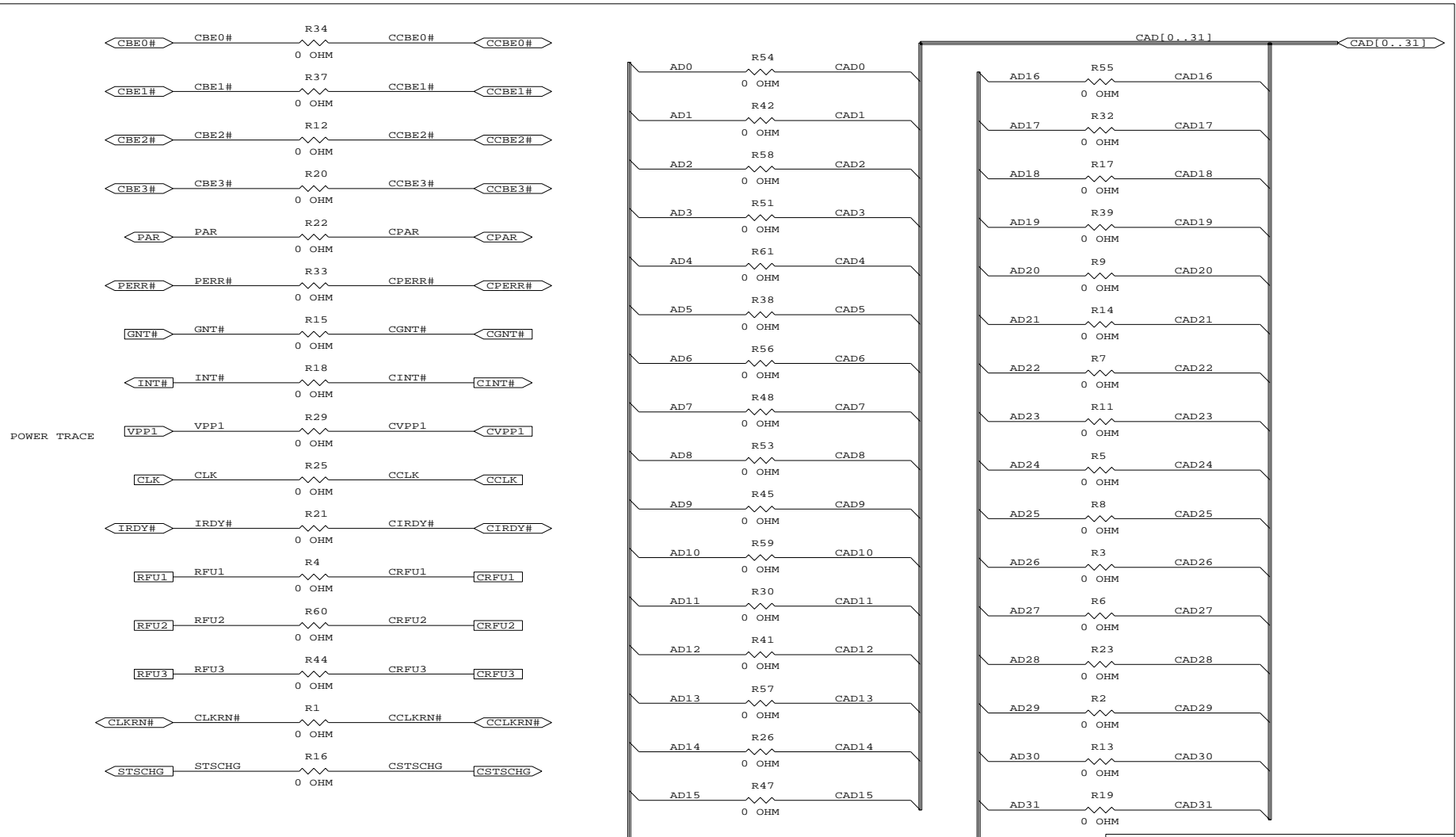
### ***A. PCCextend 140 Schematic***





HOST SIDE CONNECTOR

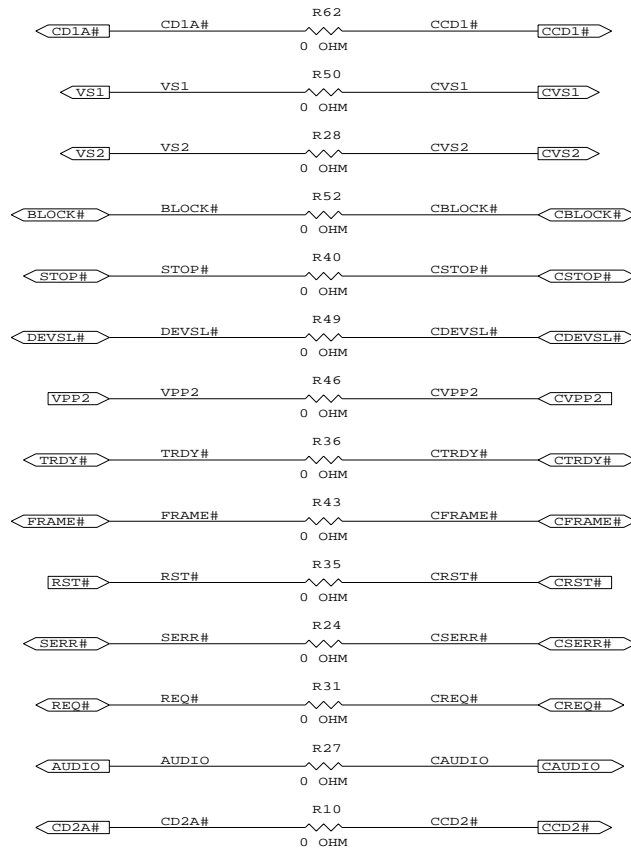
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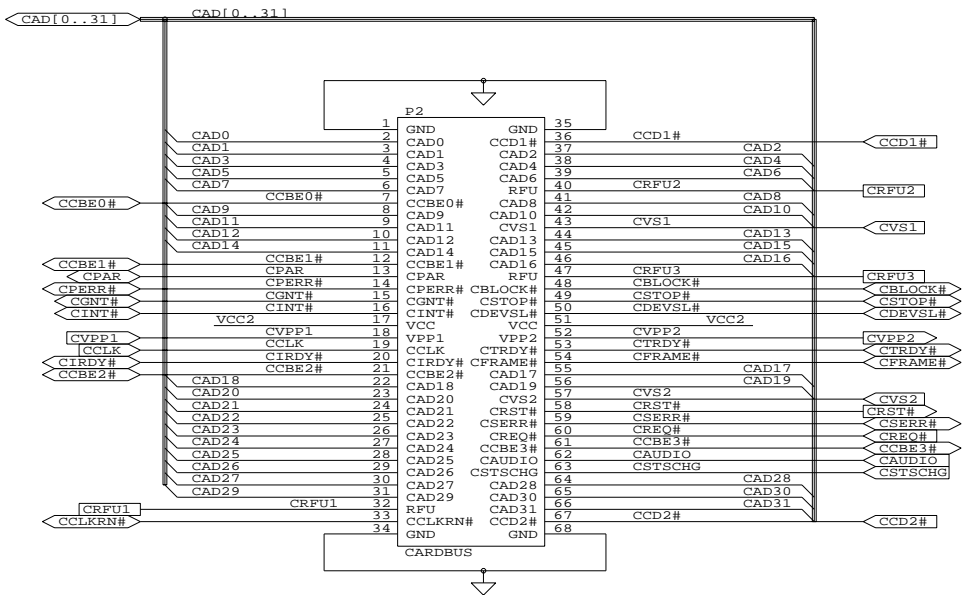
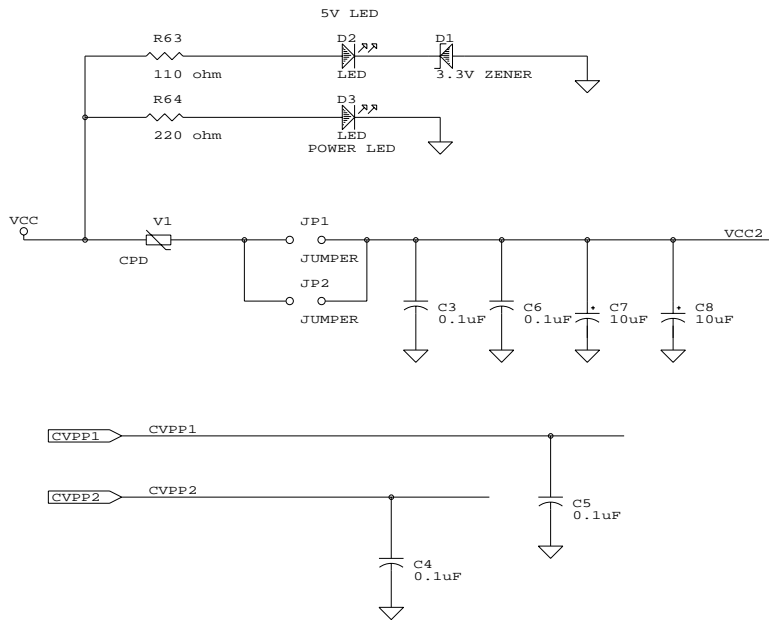
POWER TRACE

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POWER TRACE



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SOCKET SIDE CONNECTOR

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