SD Extender Board 1.0
Secure Digital Memory Card Extender
User's Manual

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1.0   *Introduction*

Aeneas Electronics' SD Extender board 1.0 is a debug and signal detection tool for Secure Digital Memory Card.

The SD extender 1.0 is designed to minimize the signal degradation effects of the extender by proven design techniques. Separate Vcc and GND plane provide a low inductance path to the host's power supply.

The SD extender has the function of over-current protection with PTC fuse. A clearly marked jumper header allows probing of all signal pins. It's also a powerful tool for engineers, or use for factory test protection.

- Test connector for all of signal and power pins
- Any signal can be isolated with jumper block
- Power and ground can be isolated for power measurements
- LED indicates power status
- Adds dumping resisters for all of signals
- Vcc bypassed for clean power
- Supports both Secure Digital Memory Cards and MMC cards
- High quality connectors for long service life
- Over-current protection with PTC fuse
- Passive adapter unnecessary
- Supports Card Type: MMC & Micro MMC & MMC plus & MMC mobile & RS-MMC & SD & Micro SD & Mini SD & SD HC

2.0   *Using the SD Extend*

The SD Extender Board 1.0 allows a Secure Digital Memory Card to be extended from the host slot for full access to the all of signal pins.

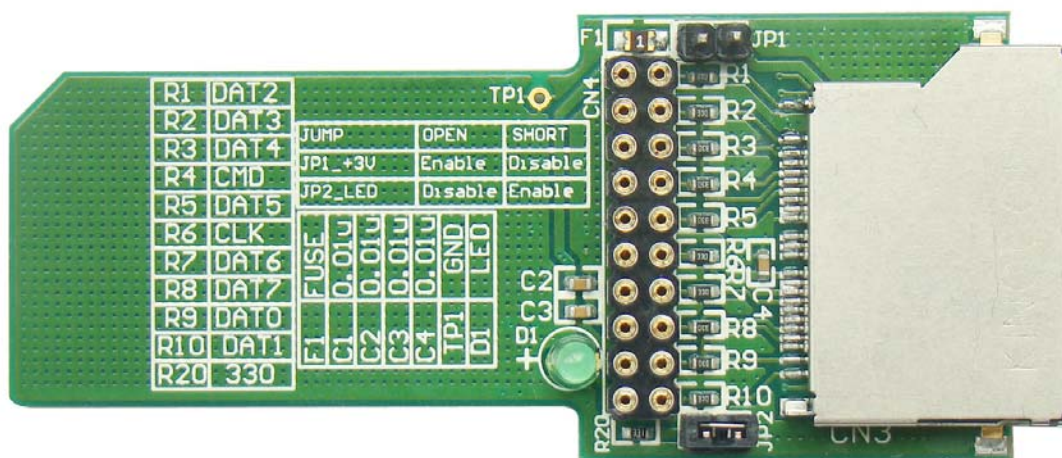Signals may be examined with an oscilloscope or analyzer via a test header.

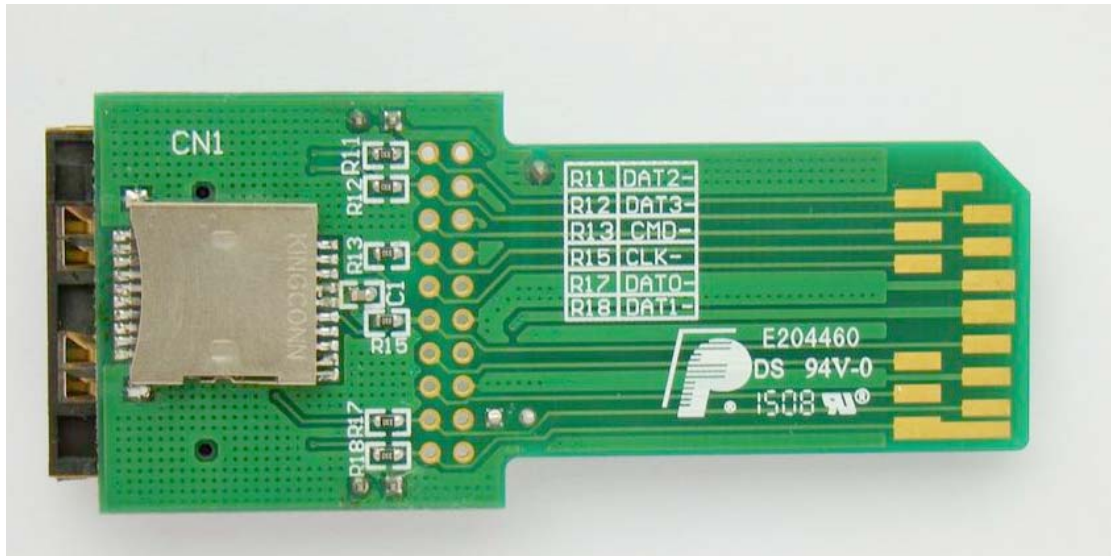Figure-1   SD Extender Board 1.0(heads)

Figure-2   SD Extender Board 1.0(back)

2.1 Using SD Extender Board

SD Extender Board1.0 is fairly easy to use. The SD Extender is inserted into the host socket with the connector pattern facing down.

Caution: You should insert, remove the extender and SD card carefully. The SD connector's pins may be broken or bent if improper force is used. Both extender and card should be inserted straight. Care of extender will ensure your long years of trouble free service.

2.2 Test points

All 13 pins of the interface are available to probe through clearly marked resister.

Note: See the reference table printed on PCB.

2.3 Over-current protection

With a PTC fuse, the extender has the over-current protection function. The function is available when headerJP1 keeps 'OPEN' status.

2.4 Power Indicator

The LED may indicate the status of the host socket's VDD. When the header JP2 keeps 'SHORT' status, the PWR LED is on.

Note: The LED does not provide the accurate measurement of VDD. Use a voltmeter to determine the actual operating voltage.

2.5 **Current Measurements**

When header JP2 keeps 'OPEN' status, ampere meter may be inserted into test circuit in series.

Caution: To ensure that the current measuring device is inserted before turning on power to the host socket. Improper power sequencing may cause a damage latch condition.

2.6 **Jumper Block at JP1**

When shipped from the factory, the header JP1 keeps 'OPEN' status, and JP2 keeps 'SHORT' status. In order to isolate a signal, remove the appropriate jumper block(s).

Appendix

A.   *Secure Digital Pin Description*

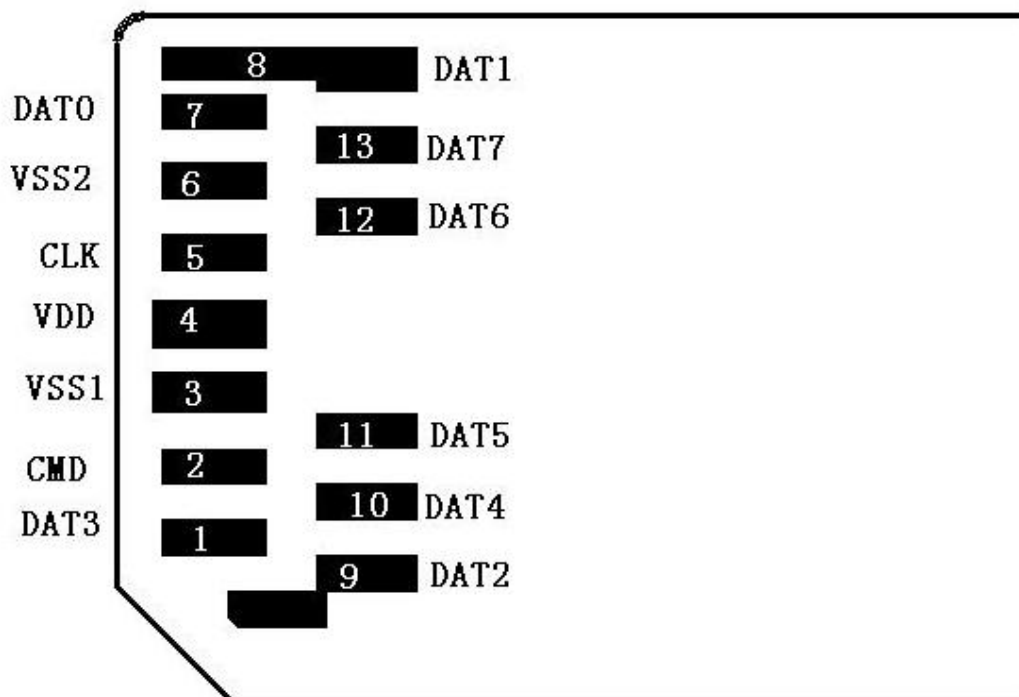| SD Conn Pin	Name	Description	JP2 Pin
1	DAT3	DAT Bit3	2
2	CMD	Command	4
3	VSS1	Supply Voltage Ground	
4	VDD	Supply Voltage	
5	CLK	Clock	6
6	VSS2	Supply Voltage Ground	
7	DAT0	Data Bit 0	9
8	DAT1	Data Bit 1	10
9	DAT2	Data Bit 2	1
10	DAT4	Data Bit 4	3
11	DAT5	Data Bit 5	5
12	DAT6	Data Bit 6	7
13	DAT7	Data Bit 7	8

Table-1 SD Extender Signal Description

Table-2 SD Card Pinout

B.   SD Extender Board 1.0 Dimension

SD Extender Board 1.0 Schematic