

C-One Technology corp.

C1 ISD

Industrial SD Card

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Specification for SD 2.0 (SDHC)

Version 1.2

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Table of Contents

| | | |
|-----|-----------------------------------|---|
| 1 | Description | 3 |
| 2 | Scope | 3 |
| 3 | Product Information | 3 |
| 3.1 | Product Models..... | 3 |
| 3.2 | Product Features: | 3 |
| 3.3 | Dimension:..... | 4 |
| 3.4 | Pin Definition..... | 4 |
| 4 | Performance..... | 5 |
| 5 | Product Specifications | 5 |
| 5.1 | Environmental Specifications..... | 5 |
| 5.2 | Reliability and Durability | 5 |

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1 Description

Pretec ISD is an Industrial grade SD/MMC compatible memory card. To fulfill more requirements from our customer. Pretec ISD provides more protection and able to meet extreme environment, such as high humidity, salt spray, bending test, plug cycle test and drop test. Also, we provide the most reliable feature in industrial field- The 15-bit ECC function, which can ensure the reliability of your valuable data

2 Scope

This document describes the key features and specifications of the Industrial Grade SD Card, as well as the information required to interface this product to a host system.

3 Product Information

3.1 Product Models

| Model | Capacity | Class Speed |
|-------------|----------|-------------|
| SD Card 2GB | 2048MB | Class 4 |
| SD Card 4GB | 4096MB | Class 4 |
| SD Card 8GB | 8192MB | Class 2 |

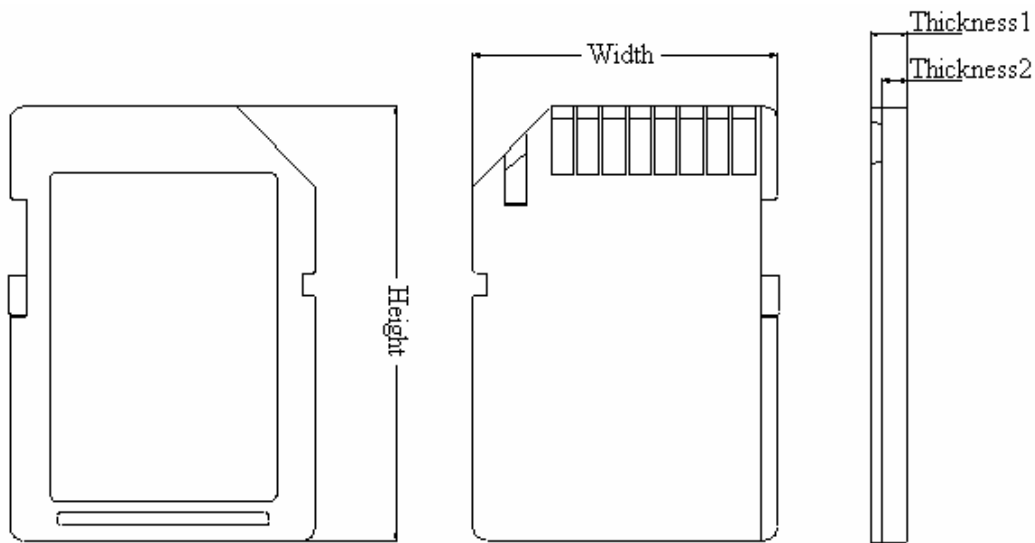
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3.2 Product Features:

- Fully compliant with SD 2.0 standard.
- Up to 8 GB of data storage.
- Two alternative communication protocols: SD/SPI Mode.
- Copyrights Protection Mechanism—Complies with highest security of SDMI standard.
- Card Detection (Insertion/Removal).
- 100 % compatible with SD and MMC applications.
- Variable clock rate : 0-50 MHz
- Voltage range: 2.7V ~ 3.6 V.
- Maximum 10MB/sec in read/write mode – 4 data lines
- Interface comprising 9 pins (clock, Command, 4 x data, 3 x lower lines).

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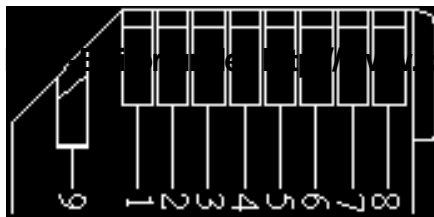
3.3 Dimension:



| Width | Thickness1 | Thickness2 | Height | Weight |
|----------|------------|------------|----------|----------------------|
| 24±0.1mm | 2.1±0.1mm | 1.4±0.1mm | 32±0.1mm | 2±0.1g (single chip) |

3.4 Pin Definition

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| Pin# | SD Mode | | | SPI Mode | | |
|------|------------------|--------|-------------------------------|------------------|------|-----------------------|
| | Name | Type | Description | Name | Type | Description |
| 1 | CD/DAT3 | I/O/PP | Card Detect/Data Line [Bit 3] | CS | I | Chip Select |
| 2 | CMD | PP | Command/Response | DI | I | Data In |
| 3 | V _{SS1} | S | Supply voltage ground | V _{SS} | S | Supply voltage ground |
| 4 | V _{DD} | S | Supply voltage | V _{DD} | S | Supply voltage |
| 5 | CLK | I | Clock | SCLK | I | Clock |
| 6 | V _{SS2} | S | Supply voltage ground | V _{SS2} | S | Supply voltage ground |
| 7 | DAT0 | I/O/PP | Data Line [Bit 0] | DO | O/PP | Data Out |
| 8 | DAT1 | I/O/PP | Data Line [Bit 1] | RSV | | |
| 9 | DAT2 | I/O/PP | Data Line [Bit 2] | RSV | | |

4 Performance

Depend on flash.

5 Product Specifications

5.1 Environmental Specifications

| Item | Condition |
|-------------------------|--------------------|
| Temperature (Storage) | -65°C to 150°C |
| Temperature (Operation) | -40°C to 85°C |
| Humidity | 25% to 95% |
| Salt atmosphere | 3% NaCl |
| ESD Protection | ±4kV HBM |
| Vibration | 15G (Peak to Peak) |
| Shock | 1kG Max |

5.2 Reliability and Durability

| Item | Duration |
|----------------------------------|---|
| Durability | 10,000 mating cycles |
| Drop Test | 1.5m free fall |
| Visual Inspection/Shape and Form | No warp age; no mold skin; complete form; no cavities; surface smoothness ≤ -0.1 mm/cm ² within contour; no cracks; no pollution. |
| MTBF | > 1,000,000 hrs |