Pretec iSD

Industrial SD Card
Specification
Version 1.5

Revised by Matika Wang 2008/10/23

C-One Technology corp.

Table of Contents

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

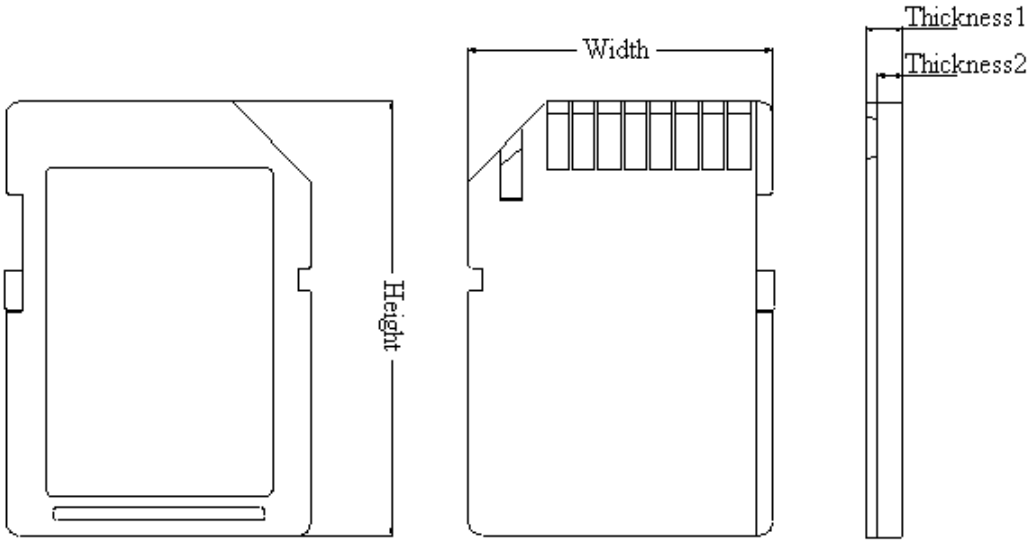
3.1 Product Models

Model	Capacity	SD spec
SD Card 256MB	256MB(FAT16/32)	1.1
SD Card 512MB	512MB(FAT16/32)	1.1
SD Card 1GB	1024MB(FAT16/32)	1.1
SD Card 2GB	2048MB(FAT16/32)	1.1
SD Card 4GB	4096MB(FAT32)	1.1
SD Card 8GB	8192MB (FAT32)	2.0(SDHC)

3.2 Product Features:

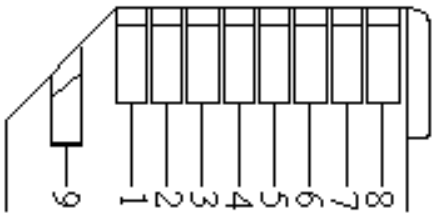
- Fully compliant with SD 1.1/2.0 standard.(only 8GB is SDHC)
- 15-bit ECC function
- Two alternative communication protocols: SD/SPI Mode.
- Copyrights Protection Mechanism—Complies with highest security of SDMI standard.
- Card Detection (Insertion/Removal).
- 100 % compatible with SD and MMC applications.
- Variable clock rate : 0-50 MHz
- Voltage range: 2.7V ~ 3.6 V.
- Minimum 10MB/sec in read/write mode – 4 data lines
- Interface comprising 9 pins (clock, Command, 4 x data, 3 x lower lines).

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



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

Minimum 10MB/sec reading performance.

5 Product Specifications

5.1 Environmental Specifications

Item	Condition
Temperature (Storage)	-65℃ to 150℃
Temperature (Operation)	-40℃ to 85℃
Humidity	25% to 95%
Salt atmosphere	3% NaCl
ESD Protection	±4kV HBM
Vibration	15G (Peak to Peak)
Shock	1kG Max
Power consumption	Read/Write Mode: 55 mA (typical)
	Read/Write Mode: 85 mA (Max)
	Standby: 1 mA

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/cm2 within contour; no cracks; no pollution.
MTBF	＞1,000,000 hrs