

Panther series CompactFlash CARD Product Specification

Preliminary Version 1.1

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1. Introduction

1.1 General Description

Pretec CompactFlash Card uses NAND-Type flash memory devices, which leads to its remarkable high performance and comes with capacities from 4GB to 16GB unformatted.

Compliant with ISA (Industrial Standard Architecture) bus interface standard, the CompactFlash Card performs sequential read/write for each sector (512 bytes) count. It also conforms to CompactFlash specification and is designed with precision mechanics to enable host devices to read/write from the CompactFlash interface into Flash Media. It can operate with a 3.3V or 5V single power from the host side.

The card provides extraordinary memory medium for PC or other CF compatible electric equipments and digital still camera, and, in particular, Pretec CompactFlash Card has been approved through various compatibility tests to be used in numerous portable desktop, notebook computers and personal handheld devices such as handheld video/audio recorders, PDAs, Palm sized PCs, Handheld PCs and Auto PCs under industrial environment.

1.2 Features

- PC Card compliant
 - Conforms to CompactFlash™ standard 4.1
 - Compatible with PCMCIA™ ATA specification
 - Support CIS implemented with attribute memory
 - Compatible with all PC Card Services and Socket Services
- PCMCIA ATA / IDE interface
 - ATA command set compatible
 - Support for 8-bit or 16-bit host data transfer
 - Program and auto-wait-state initiation for compatibility with any IORDY supporting host
 - Compatibility with host ATA disk I/O BIOS, DOS/Windows file system, utilities, and application software
- Extremely rugged and reliable
 - Advanced defect block management
- 3.3/5 Volt power supply, very low power consumption
 - Internal self-diagnostic program operates at VCC power on
 - Auto sleep mode
- Hardware BCH ECC to correct up to 13/24 bit errors within 1KB data
- Automatic on-the-fly, in-buffer Error Correcting
- Zero-power data retention, no batteries required
- 3 variations of mode access
 - Memory card mode
 - I/O card mode
 - True IDE mode
 - PIO mode 6
 - UDMA mode 6
 - Supported Multi word DMA mode 6 .

1.3 Ordering Information

Part Number	Capacity	Description
CFA04G-CP	4GB	4GB Panther CF Card with Plastic Housing
CFA08G-CP	8GB	8GB Panther CF Card with Plastic Housing
CFA016G-CP	16GB	16GB Panther CF Card with Plastic Housing
CFA04G-CR	4GB	4GB Panther CF Card with Metal Housing
CFA08G-CR	8GB	8GB Panther CF Card with Metal Housing
CFA016G-CR	16GB	16GB Panther CF Card with Metal Housing



2. Product Specification

2.1 Operation and environment description

Operating Voltage	DC Input Power	5V ± 10%	
		3.3V ± 5%	
Typical power consumptions	5V	Read Mode: 40mA (Max.)	
		Write Mode: 60mA (Max.)	
		Standby Mode: 6.5mA(Approach values)	
		Read/ Write Peak: 100mA	
	3.3V	Read Mode: 20mA (Max.)	
		Write Mode: 35mA (Max.)	
		Standby Mode: 1mA (Approach values)	
		Read/ Write Peak: 100mA	
Environment conditions	Operating Temperature	Normal Temp	0°C to +70°C
	Storage Temperature	Normal Temp	0°C to +70°C
	Humidity Operation	5% to 95% (Non-condensing)	
	Humidity Non-operation	5% to 95% (Non-condensing)	
	Shock Operation	3000-G (Max.)	
	Shock Non-operation	3000-G (Max.)	
	Vibration Operation	30-G (Peak to peak to maximum)	
	Vibration Non-operation	30-G (Peak to peak to maximum)	
File system supported compatibility	FAT		
	FAT16		FAT32
	NTFS	EXT2	EXT3

2.2 Physical description

Weight and Measures (Plastic housing)	Type I	Weight: 15 g	L x W x H 36.4 x 42.8 x 3.3 (mm)
		Pin-Pitch: 1.27 mm	
Weight and Measures (Metal housing)	Type I	Weight: 25 g	L x W x H 36.4 x 42.8 x 3.3 (mm)
		Pin-Pitch: 1.27 mm	
Storage Capacities	Capacity		4GB – 16GB (Dual Channel)
Performance	Data Transfer Rates (Dual)		Read speed up to 55 Mbytes/sec (Max.)
			Write speed up to 50 Mbytes/sec (Max.)
Reliability	MTBF		3,000,000 hours
	Error Correction		BCH ECC to correct up to 13/24 bit
	R/W Test		Test disk: 3,000,000 Read/Write cycles

3. Product Model

3.1 Industrial CF Card Part Number Definition

X₁X₂ X₃ X₄X₅ X₆ -X₇ X₈ X₉ X₁₀

Code	Definition	symbol	Description
X ₁ X ₂	Card Type	CF	CF card type I
X ₃	Solution	A	Panther Series
X ₄ X ₅ X ₆	Capacity	04G	4GB
		08G	8GB
		16G	16GB
X ₇	Temperature Range	C	Commercial Grade 0°C ~ 70°C
X ₈	Housing	P	Plastic housing
		R	Metal housing
X ₉ X ₁₀	Extension	PR	PIO 4, UDMA off, Removable
		PF	PIO 4, UDMA off, Fixed
		UR	PIO 4, UDMA 4, Removable
		UF	PIO 4, UDMA 4, Fixed

Note :

1. Dual-Channel are xxxxxx-CP/CR/LR/HR

4. Support Flash Media

4.1 CompactFlash Card Logical Format Parameters (CHS)

Card Density ¹	4GB	8GB	16GB
Cylinder	7785	15538	31077
Heads	16	16	16
Sectors/Track ²	63	63	63
Total Sectors/Card ³	7,847,280	15,662,304	31,326,208
Capacity ⁴	4,007,985,152	8,016,560,128	16,034,562,048

Unit : Bytes

Notes:

1. Those are general unformatted capacity of all cards.
2. Total tracks =number of head x number of cylinder.
3. Total sector/Card = sector/track x number of head x number of cylinder
4. It's the logical address capacity including the area which is used for file system.
5. Different file system format (FAT16/32) might result in minor different capacity
6. Future spec change can be downloading from Pretec website without further notice to each customer.



4.2 Physical Specification

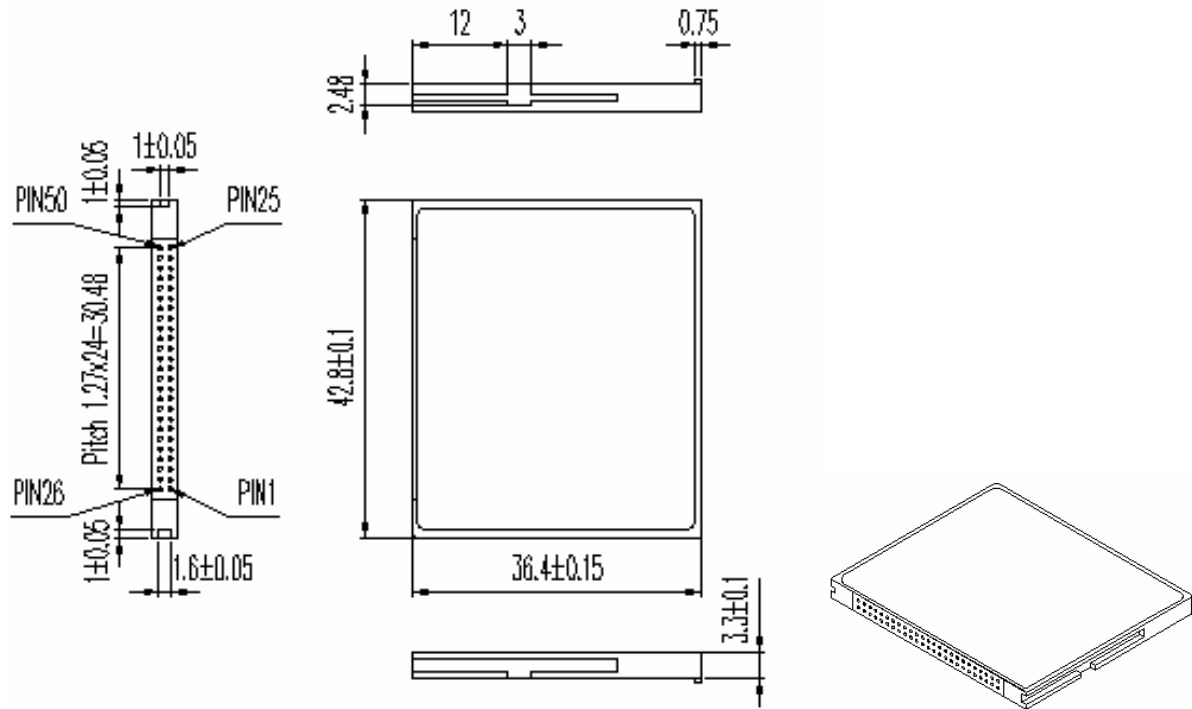


Figure 1: Mechanical Dimensions of Panther series CF Card

5. Block Diagram

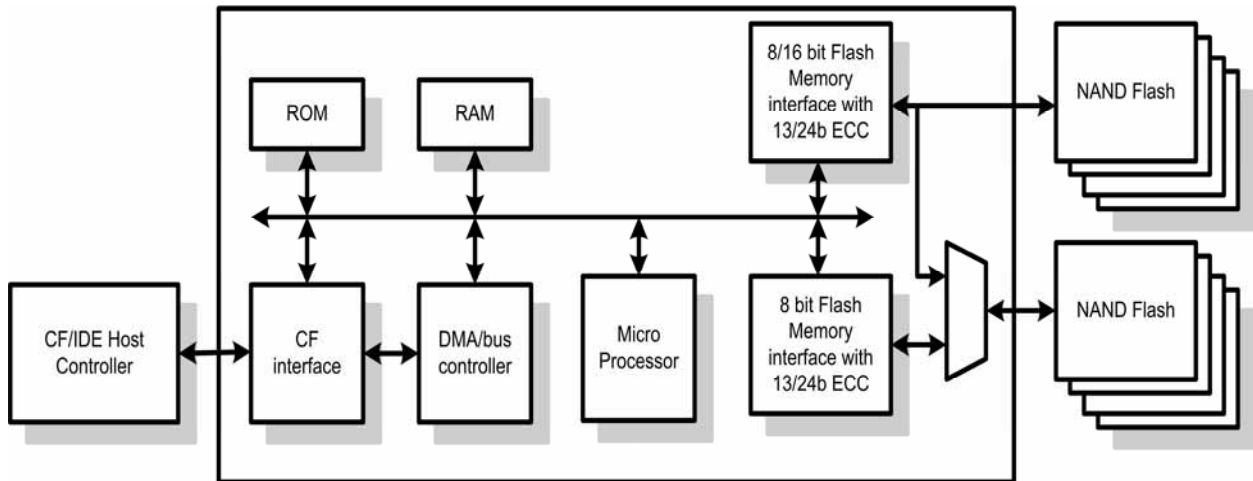


Figure 2: Function Block Diagram of Panther series CF Card

