



# California Peripherals & Components, Inc.

Industrial Temperature Solid State Flash Storage

## CompactFlash Industrial Temperature



The California PC FLASH Industrial CompactFlash Cards combine advanced Flash controller technology and **Industrial NAND Type SLC flash memory**. The California PC FLASH Industrial CompactFlash Cards are **Industrial Temperature Grade (-40°C ~+85°C)** to operate in various specialized applications in normal or harsh operating environments. With the great advantages of non-volatile and solid state, the CompactFlash™ Cards are more durable than conventional hard disk drives and consume around 5% of the power required by small disk drives. CompactFlash

Cards are typically used with Handheld PCs, Data Collection, GPS units, Measuring and Test Equipment, Laptops and data storage devices. When a CompactFlash Card is inserted in an IDE adapter, it performs as an IDE Flash disk. California PC FLASH's Industrial CompactFlash Cards are the best solutions for critical applications. Please inquire about our various CF adapters.

**Features:** CompactFlash Specification 3.0 compliant - True IDE Mode compatible - Supports Wear-leveling and advanced bad sector management algorithms - Advanced ECC (Error Code Correction) technology +5 V ± 10% or +3.3 V ± 5% operation. Industrial Grade capacities from 16MB up to 16GB – Plug into a CF socket or, with an adapter (FCFPC-ADPT), into a standard Type II PC Card slot.

- CompactFlash™ Card Specification 3.0 compliant
- Operation Modes: PC Card Memory, PC Card I/O and True-IDE Mode
- PIO 4, DMA 2 (Multi Word DMA), and Ultra DMA Mode 4 supported
- Hardware RS-code ECC capable of correcting 24 bits in 1,024 byte data
- Wear-Leveling algorithm for flash endurance
- Very low power consumption
- Build for extreme environments
- Automatic error correction and retry capabilities
- Supports power down commands and Auto Stand-by / Sleep Mode
- +5 V ± 10% or +3.3 V ± 5% operation
- Low weight
- Noiseless
- MTBF > 1,000,000 hours
- Minimum 10,000 insertions
- Supports O/S: Win 31/95/98/Me/NT/2000/XP/2003/Vista/WinCE, QNX, Linux, DOS, Windows 7, Windows 8, and more
- Capacity: 32MB, 64MB, 128MB, 256MB, 512MB, 1GB, 2GB, 4GB, 8GB, 16GB, and 32GB (unformatted)

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CompactFlash

Industrial Grade  
Industrial Temperature

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For more product info, pricing  
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### Performance

Data Transfer Rate To/From Flash		25 Mbytes/sec burst
Date Transfer Rate	Ultra DMA mode 4	66.6 Mbytes/sec burst
To/From Host	PIO mode 4 / DMA2	16.6 Mbytes/sec burst
Maximum Performance	Sequential Read	43 Mbytes/sec Max.
	Sequential Write	35 Mbytes/sec Max.

### Environmental Specification

Industrial Temperature	Operating	-40°C + 85°C
	Non-operating	-50°C + 95°C
Vibration	Operating Max	15G peak-to peak Max.
	Non-operating	15G peak-to peak Max.
Humidity	Operating Max	5 ~ 95% non-condensing
	Non-operating Max	5 ~ 95% non-condensing
Shock	Operating Max	2000G Max.
	Non-operating Max	2000G Max.
Altitude	Operating Max	50,000 Feet Maximum
	Non-operating Max	50,000 Feet Maximum

### Power Consumption

DC Input Voltage 100mV max. ripple (p-p)		5V +/- 10%
+5V Current (Maximum average value)	Standby Mode	12.5 mA
	Read Mode	120 mA
	Write Mode	160 mA

### Reliability

MTBF (Main Time Between Failure)	> 1,000,000 hours
Data Reliability	< 1 non-recoverable error in 10 <sup>14</sup> bits read < 1 erroneous correction in 10 <sup>20</sup> bits read
Wear-leveling Algorithms	Supported
ECC Technology	Hardware RS-code ECC capable of correcting 24 bits in a 1,024 byte data
Endurance	Greater than 1,000,000 cycles logically contributed by Wear-leveling and advanced bad sector management
Data Retention	10 years
Warranty	3 Years

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## Physical Specifications

Weight	< 12g
Length	36.40 ± 0.15 mm (1.433 ± 0.006 in.)
Width	42.8 ± 0.10 mm (1.685 ± 0.004 in.)
Thickness	3.3 ± 0.10 mm (0.130 ± 0.004 in.)

## Part Numbers\*

32MB	FCFI-32MB-XXXX	2GB	FCFI-02GB-XXXX
64MB	FCFI-64MB-XXXX	4GB	FCFI-04GB-XXXX
128MB	FCFI-128MB-XXXX	8GB	FCFI-08GB-XXXX
256MB	FCFI-256MB-XXXX	16GB	FCFI-16GB-XXXX
512MB	FCFI-512MB-XXXX	CF to PC Card Adapter	FCFPC-ADPT-02
1GB	FCFI-01GB-XXXX		

### Standard Part Numbers:

#### 32MB to 8GB

- 2132 = Removable, PIO 4
- 2232 = Fixed, PIO 4
- 3232 = Fixed, DMA2
- 3332 = Auto Detect, DMA 2
- 4132 = Removable, UDMA 4
- 4232 = Fixed, UDMA 4
- 4332 = Auto Detect, UDMA 4

#### 16GB

- 2131/3-02 = Removable, PIO 4
- 2231/3-02 = Fixed, PIO 4
- 3231/3-02 = Fixed, DMA2
- 3331/3-02 = Auto Detect, DMA 2
- 4131/3-02 = Removable, UDMA 4
- 4231/3-02 = Fixed, UDMA 4
- 4331/3-02 = Auto Detect, UDMA 4

\*XXX1-02 designates Micron and XXX3-02 Intel flash. XXX1 and XXX3 cards are in limited supply with XXX1-02 and XXX3-02 completely replacing them once inventory is sold out. Call or email for details.

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