

### California PC CompactFlash

#### Industrial Grade



The California PC FLASH Industrial CompactFlash Cards combine advanced Flash controller technology and **NAND Type SLC flash memory**. The California PC FLASH Industrial CompactFlash Cards are **Industrial Temperature Grade (-40°C ~+85°C)** to fulfill 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.

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**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  $\pm$  10% or +3.3 V  $\pm$  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
- Ultra DMA Mode supported up to Mode 4
- Internal Error Correcting Code (ECC) function
- Wear-Leveling algorithm to ensure the best of flash endurance
- Very low power consumption
- Rugged for harsh environments
- Automatic error correction and retry capabilities
- Supports power down commands and Auto Stand-by / Sleep Mode
- +5 V  $\pm$  10% or +3.3 V  $\pm$  5% operation
- Low weight
- Noiseless
- MTBF > 2,000,000 hours
- Minimum 10,000 insertions
- Supports O/S: Win 31/95/98/Me/NT/2000/XP/2003/Vista/WinCE, QNX, Linux, DOS, Windows 7, and more
- Capacity: 16MB, 32MB, 64MB, 128MB, 256MB, 512MB, 1GB, 2GB, 4GB, 8GB, 16GB, and 32GB

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INDUSTRIAL TEMPERATURE

-40°C

+85°C

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Industrial Temperature Solid State Flash Storage

## Performance

|                                  |                  |                       |
|----------------------------------|------------------|-----------------------|
| Data Transfer Rate To/From Flash |                  | 20 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  | 29 Mbytes/sec Max.    |
|                                  | Sequential Write | 19 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.             |

## Power Consumption

|                                                                  |            |                      |               |
|------------------------------------------------------------------|------------|----------------------|---------------|
| DC Input Voltage 100mV max. ripple (p-p)<br>+3.3V ± 5% +5V ± 10% |            | Extended Temperature |               |
| +5V Current<br>(Maximum average value)                           | Sleep Mode | 2.3mA (Typ.)         | 2.3mA (Typ.)  |
|                                                                  | Read Mode  | 57.7mA (Typ.)        | 57.7mA (Typ.) |
|                                                                  | Write Mode | 60mA (Typ.)          | 60mA (Typ.)   |

## Reliability

|                                  |                                                                                                                   |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| MTBF (Main Time Between Failure) | > 2,000,000 hours                                                                                                 |
| Data Reliability                 | < 1 non-recoverable error in 10 <sup>14</sup> bits read<br>< 1 erroneous correction in 10 <sup>20</sup> bits read |
| Wear-leveling Algorithms         | Supported                                                                                                         |
| ECC Technology                   | 4 bits Error Connection Code                                                                                      |
| Endurance                        | Greater than 2,000,000 cycles logically contributed by Wear-leveling and advanced bad sector management           |
| Data Retention                   | 10 years                                                                                                          |
| Warranty                         | 3 Years                                                                                                           |
| Certification                    | CE and FCC Class B                                                                                                |

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## Physical Specifications

|                  |                                        |
|------------------|----------------------------------------|
| Weight (maximum) | 36.4 mm (L) x 42.8 mm (W) x 3.3 mm (H) |
| 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.)      |

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## Part Numbers\*

|       |              |                       |               |
|-------|--------------|-----------------------|---------------|
| 16MB  | FCFI-16MB-02 | 1GB                   | FCFI-1024MB   |
| 32MB  | FCFI-32MB    | 2GB                   | FCFI-2048MB   |
| 64MB  | FCFI-64MB    | 4GB                   | FCFI-4096MB   |
| 128MB | FCFI-128MB   | 8GB                   | FCFI-8192MB   |
| 256MB | FCFI-256MB   | 16GB                  | FCFI-16384MB  |
| 512MB | FCFI-512MB   | CF to PC Card Adapter | FCFPC-ADPT-02 |

\* Removable, PIO 4 Disk Mode is Default

### Available Options:

|      |                                 |
|------|---------------------------------|
| -F   | = Fixed Disk                    |
| -A   | = Auto Detect                   |
| -D2  | = Multi Word DMA 2, Removable,  |
| -U4  | = Ultra DMA 4, Removable        |
| -D2A | = Multi Word DMA 2, Auto Detect |
| -U4A | = Ultra DMA 4, Auto Detect      |
| -D2F | = Multi Word DMA 2, Fixed Disk  |
| -U4F | = Ultra DMA 4, Fixed Disk       |

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