

Apacer

Sales Kits - ATA CFC

E-Flash Product Dept.

Apr. 06, 2009

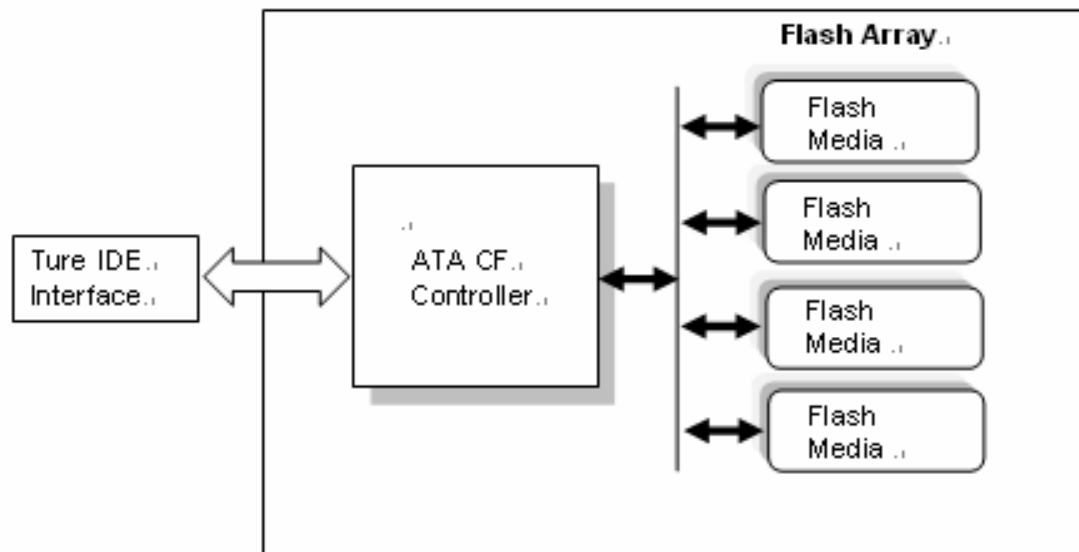
Outline

- ◆ **Product Introduction**
- ◆ Selling Points
- ◆ Product Roadmap
- ◆ Competitor Analysis
- ◆ Applications
- ◆ Appendix

Product Introduction

What's ATA CF?

- ◆ It is a CompactFlash card form factor which only support ATA / true IDE mode.



Product Introduction

● Industrial ATA CF III

- ◆ Interface: True IDE mode
- ◆ Capacity: 128MB ~ 16GB
- ◆ Temp.: -40°C ~ 85°C for ET
- ◆ Up to 8 bit correction per 512 bytes (BCH)
- ◆ Two types
 - <1> **Standard Type:**
Performance R/W: Up to **35/15** (MB/s)
 - <2> **High Speed Type:**
Performance R/W : Up to **35/25** (MB/s)



Product Introduction

Specification:

| | |
|--|---|
| Model | ATA CF |
| Interface | True IDE mode |
| Transfer mode | PIO Mode-4 MWDMA Mode-2 UDMA Mode-4 |
| Connector | 50pin female |
| Capacity | 128MB ~ 16GB |
| Read/Write Performance (MB/sec) | Standard: 35/15 High speed: 35/25 |
| ECC Support | Up to 8 bit correction per 512 bytes (BCH) |
| Environmental Spec. | Operating temp.: 0°C ~ + 70°C (Standard) -40 °C ~ + 85 °C (ET) Storage temp.: -40°C ~ 100°C |
| Endurance (MTBF) | 2,000,000 hours |

Product Introduction

● Support Functions

- ◆ Support SLC NAND Flash
- ◆ Support Extended Temperature (-40°C ~ 85°C)
- ◆ Support True IDE mode
 - <1> PIO mode 4
 - <2> MWDMA mode 2
 - <3> UDMA mode 4

Product Introduction

- **None Support Functions (Reminder!)**
 - ◆ Memory Card mode
 - ◆ I/O Card mode
 - ◆ Access data through card reader is not adopted.

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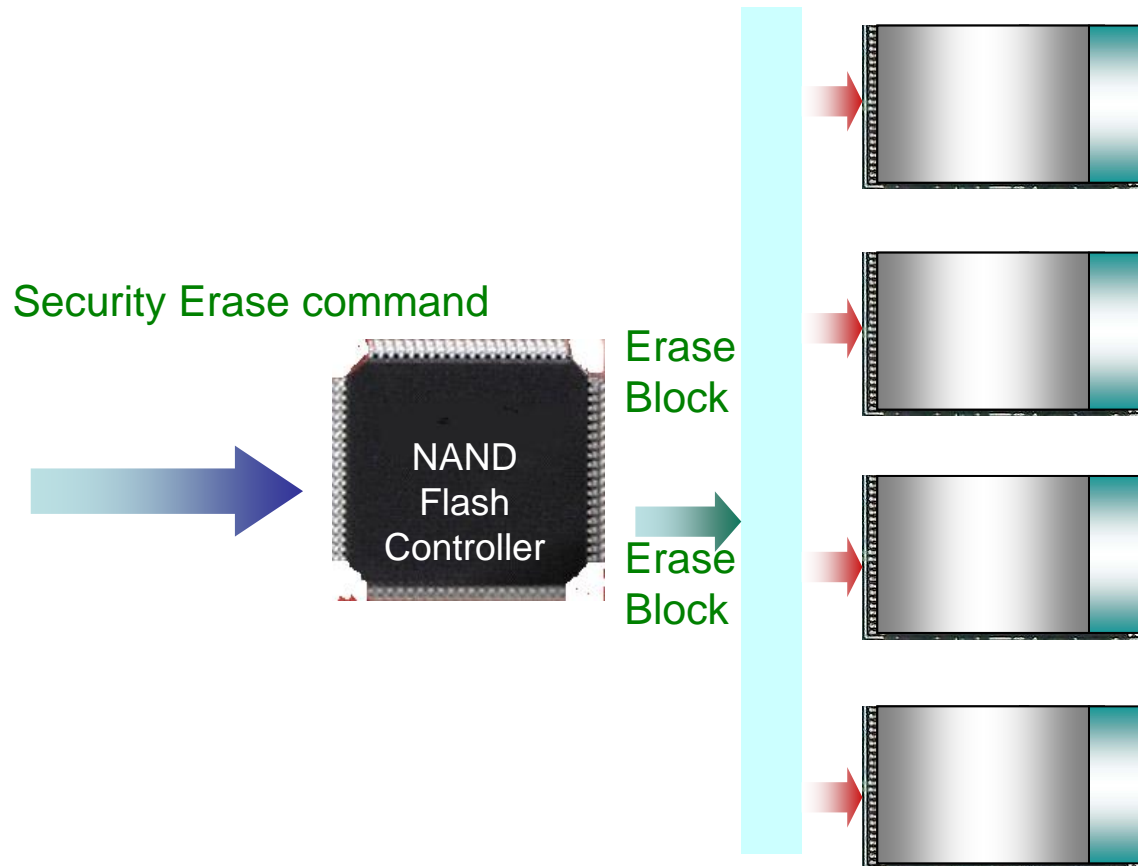
Selling Points

| Model | Std. CFIII | VA CFIII | ATA CF |
|------------------------------------|------------|----------|--------|
| Built-in Hardware ECC | ● | ● | ● |
| Wear-leveling | ● | ● | ● |
| Block Management | ● | ● | ● |
| S.M.A.R.T. Function | | ● | ● |
| Intelligent Power Failure Recovery | | ● | ● |
| Enhanced Data Integrity | | ● | ● |
| Quick Erase | | | ● |
| Secure Protection Zone | | | ● |

Quick Erase

- Additional software is not required
- Adopt security erase command
- Quick erase range
 - user block
 - spare block
- Erase block up to 4 chips simultaneously

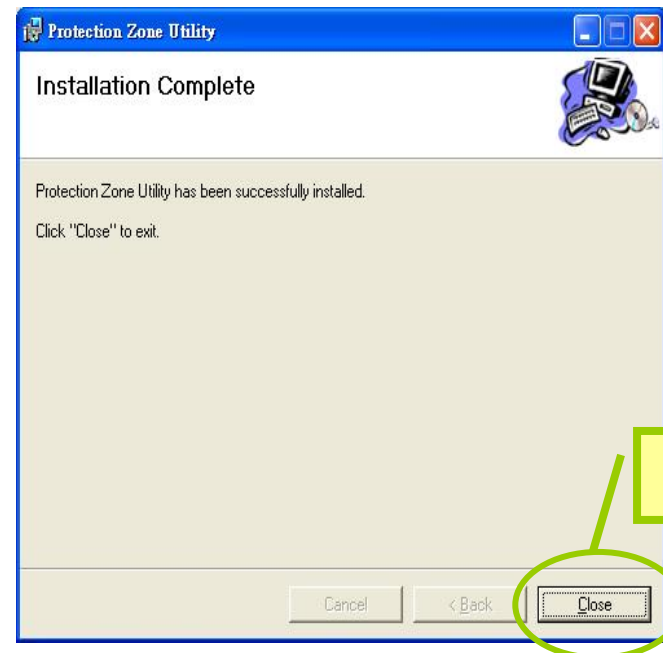
Quick Erase



Secure Protection Zone

The function of secure protection zone is to protect data. Users could lock content of card against overwriting the data. Also, users could utilize hardware or software control methods to execute protection.

◆ Install Procedure



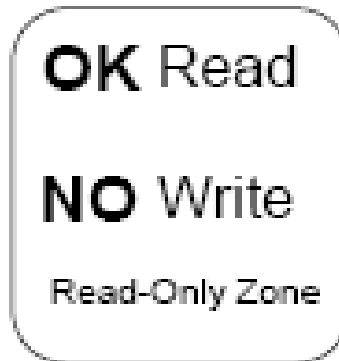
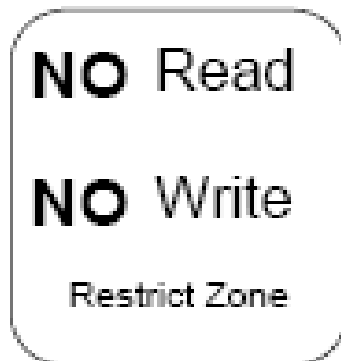
Secure Protection Zone

◆ Configuration



Definition:

- **Unprotected:** A zone in unprotected state will be fully accessible.
- **Read-only:** A zone in read-only state will be accessible by read command only.
- **Restricted:** A zone in restricted state will not be accessible.

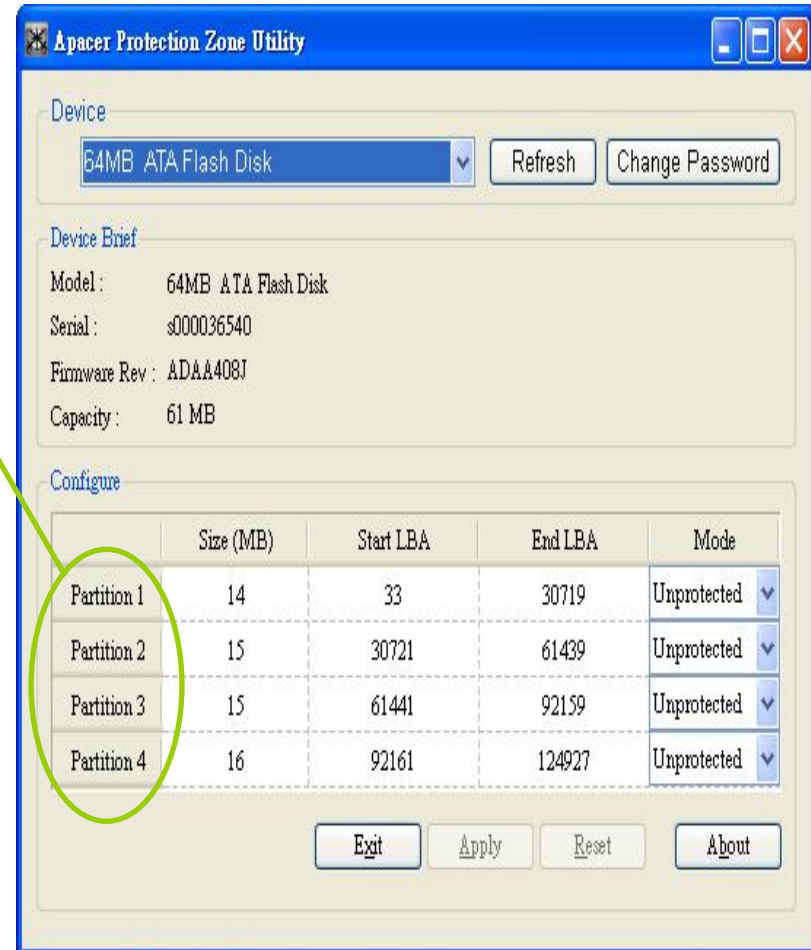


Secure Protection Zone

◆ Configure Partition

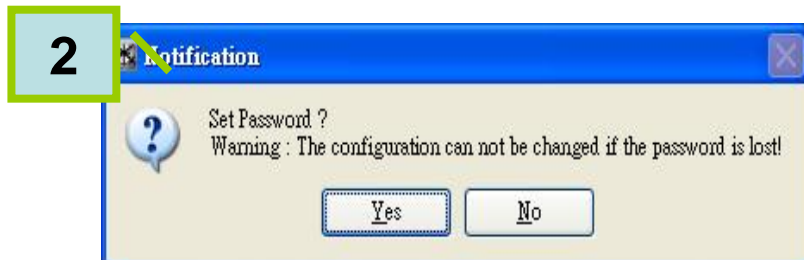
Create Partitions:

The definition of a zone means a present partition of the ATA CF. A maximum of 4 zones (partitions) can be configured for each ATA CF card.



Secure Protection Zone

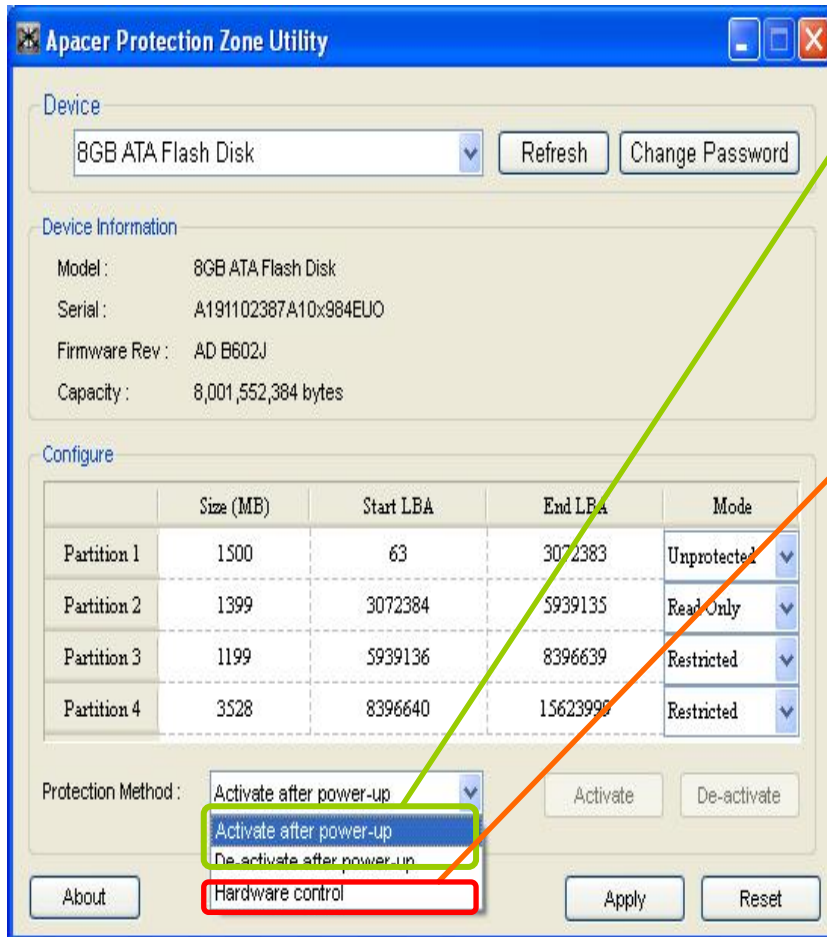
◆ Password Setting



The valid characters of a password are **0-9**, **a~f**, and **A~F**. The max. length is ten digital characters, ten zeroes are an invalid password.

Secure Protection Zone

◆ Control Methods



<1> Hardware control

- ◆ Pin 40 of ATA CF is set up write protection. Pin 40 is GND pin.
- ◆ Whole disk protection setting

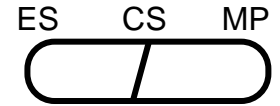
<2> Software control

- ◆ Up to 4 protection zones
- ◆ 3 types of zones: restricted, read-only, and unprotected
- ◆ Used password to protect contents
- ◆ Support FAT32/FAT16 file system, NTFS is not be recommended.
- ◆ Support Windows XP, Linux kernel 2.6.21

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- ◆ **Product Roadmap**
- ◆ Competitor Analysis
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Product Roadmap











| Model | 2008 | | 2009 | | | | 2010 | | | | |
|----------------------|---|----|------------------------|---|----|----|------|----|----|----|--|
| | Current Generation | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | |
| Industrial CF series | <ul style="list-style-type: none"> Standard CFIII PIO6, MW-DMA4 UDMA4 SLC: 128MB to 16GB Up to Read: 35MB/s Write: 25MB/s | | <p>VA CFIII</p> | <p>Same spec as Standard CFIII Plus S.M.A.R.T. Function Advanced Wear-Leveling Enhanced Data Integrity ES: W4/Dec 08' ; CS: W1/Feb 09'</p> | | | | | | | |
| | | | <p>ATA CF</p> | <p>ATA/True IDE Plus S.M.A.R.T. Function Advanced Wear-Leveling Enhanced Data Integrity Secure Protection Zone ES: W1/Feb. 09' ; CS: W4/Mar 09'</p> | | | | | | | |

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Competitor Analysis(1/2)

| Company | Apacer | RiDATA | STEC | | | Silicon System | | |
|--------------------|---|---|--|---|--|--|---|--|
| Product |  ATA CF |  Supreme series |  MACH4 |  MACH2 |  MACH1 |  IICF-4000 |  CF-4100/4103 |  CF-3xxx |
| Transfer mode | PIO-4 MWDMA-2 UDMA-4 | UDMA-4 | PIO-6 MWDMA-4 UDMA-6 | PIO-6 MWDMA-4 UDMA-5 | PIO-6 MWDMA-4 | PIO-6 MWDMA-4 UDMA-4 | PIO-6 MWDMA-4 UDMA-4 | PIO-4 MWDMA-2 |
| R/W Speed (MB/sec) | 35/25 | 150X | 90/55 | 30/20 | 10/7 | 34/19 | 20/12 | 8/6 |
| Capacity | 128MB~16GB | 1GB~8GB | (SLC): up to 16GB (MLC): up to 32GB | Up to 8GB | (Type I): Up to 8GB (Type II): Up to 16GB | 1GB ~ 16GB | 256MB ~ 4GB | 32MB ~ 8GB |

Competitor Analysis(2/2)

| Company | Apacer | RiDATA | STEC | Silicon System |
|-----------------|--|---|--|--|
| Function name | Secure Protection Zone | Write protection | Total Drive Protection | SiSecure (includes SiKey / SiZone / SiProtect) |
| Control method | Hardware/Software | Hardware | Hardware/Software | Hardware/Software |
| Interface | True IDE mode | Memory Card mode | Memory Card mode | Memory Card mode |
| Pin# for WP | Pin#40 | N/A | Pin#24 | Pin#24 |
| Physical switch | No | Yes | No | No |
| Partition | Yes | No (Full disk protection) | Yes | Yes |
| Security level | Unprotected Read Only Secure partition Custom ID to protect content | Once data is recorded in the card, users can physically lock the card against overwriting the data. | Unprotected Read Only Secure partition Custom ID to protect content | Unprotected Read Only Secure partition Custom ID to protect content |

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Applications

• POS Machine



Point of Sale System

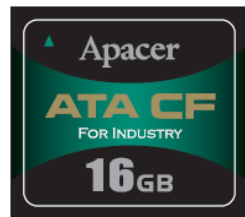


• Specifications

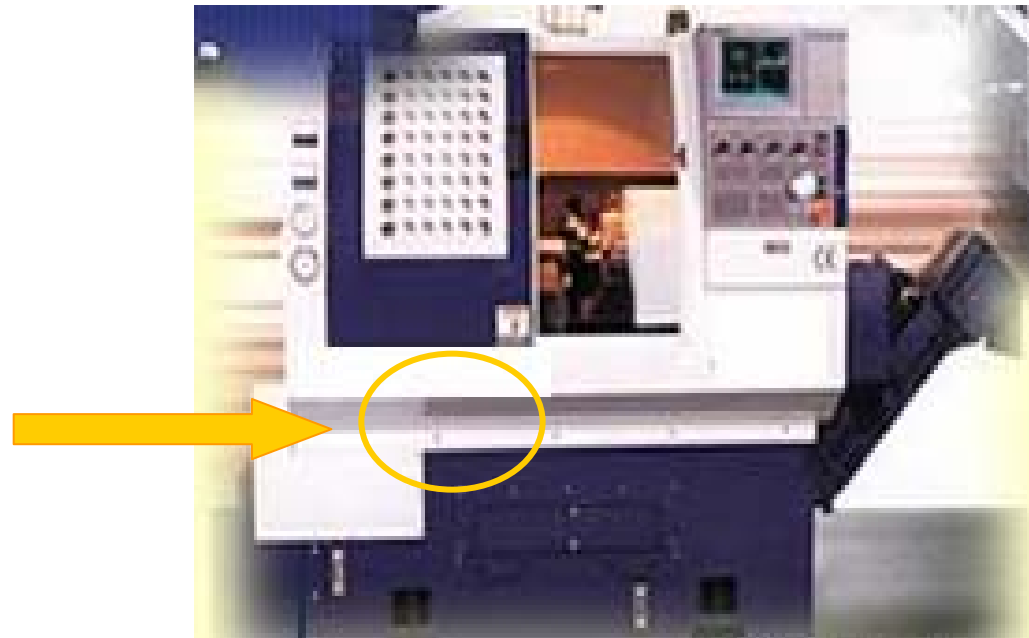
| | |
|-----------------------|---|
| CPU | Socket-370 base supports up VIA C3, Intel® Tualutin Pentium® III/Celeron™ up to 133MHz FSB |
| System chipset | VIA CLE266 (VT8623+8235) |
| System memory | 2 x DDR 200/266 SDRAM socket support up to 2GB |
| VGA Display | Integrated in VT8623 - Resolution: 1920x1440 for CRT display with DB15 and 2x5 box header - DF 14-20F connector for Supports single channel 24-bit TTL / LVDS LCD interface, support dual independent display |
| SSD | 1 x Compact Flash™ Type II socket |
| Ethernet | - 1 x 10/100Mbps Realtek 8100BL Ethernet Controller (POS-380R) |
| Audio | AC'97 Codec (Realtek 5.1-channel) - 5 x RS-232 (3 by pin header) - 1 x RS-232/422/485 selectable - 1 x LPT supports SPP/EPP/ECP mode |
| I/O | - 6 x USB 2.0 (2 x USB connectors, others by 2 x 4 pin-header) - 1 x PS/2 for Keyboard/Mouse - 2 x IDE ATA 66/100/133 (40-pin with 2.54mm pitch) - 1 x Floppy (34-pin with 2.54mm pitch) - 1 x IrDA |
| Digital I/O | TTL Level, 4 x Inputs and 4 x outputs |
| Extension Slot | 1 x 32-bit PCI slot |
| WDT | Software programmable supports 1 ~ 255 sec, system reset |
| Hardware Monitor | Provides CPU Vcore, Vcc, CPU/ System fan speed and temperature detecting function |
| Power Consumption | +5V@8.1A, +5VSB@0.35A (STR), -12V@0.1A, +12V@0.26A (PIII 1GHz, 133MHz FSB 256MB DDR266) |
| Power Connector | AT & ATX |
| Operation Temperature | 0~60°C |
| Relative Humidity | 5~95%, non-condensing |

Applications

•Industrial Automation

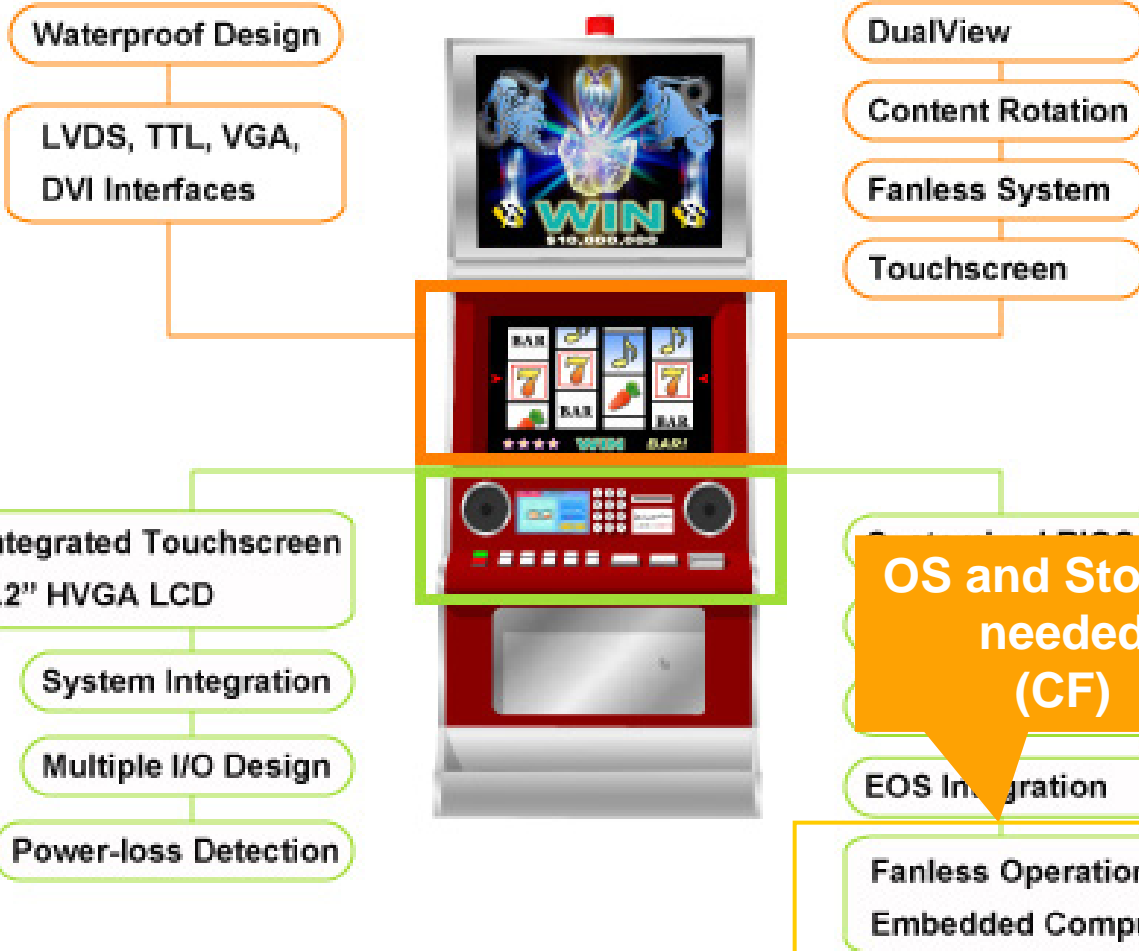


CF Card



Applications

•Slot Machine

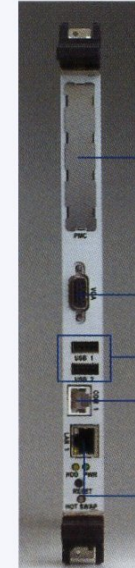
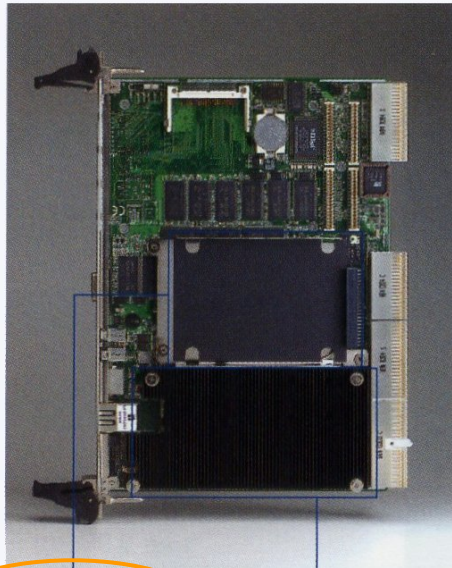
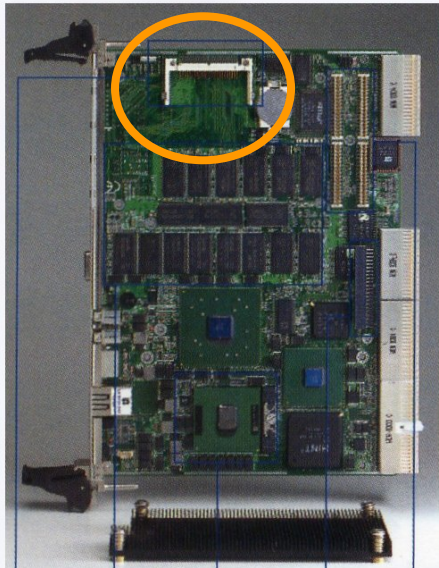


Source: Axiomtek web site

Applications

•Networking Equipment

CF Card



- One PMC knockout
- One DB-15 VGA port
- Two USB 2.0 ports
- One RJ-45 COM1 port
- One RJ-45 Gigabit LAN port

- One CompactFlash socket
- Micro-FCPGA socket
- Onboard memory
- One 64-bit/66 MHz PMC connector
- One 2.5" IDE socket

- One 2.5" HDD bay
- One passive CPU heatsink



2.5" HDD

Onboard Flash

2.5" IDE

Applications

•DVR Machine

| DVR type | Stand alone DVR (Embedded DVR) | PC based DVR |
|-----------------|---|---|
| |  |  |
| Market share | Large | Small, focus on high-end model |
| OS | ARM/ MIPS+DSP, x86/ Power-PC | Linux/ VxWORKS/ pSOS |
| Operation | Easy-to-use through front bottom/remoter | Operate in OS |
| Storage Device | HDD, Disk array External: USB, CDR/DVD | HDD CF card (for O/S installation) External: USB, CDR/DVD |
| System upgraded | No | Yes (capture card, HDD, memory..etc) |
| Maintenance | Non-PC-literate users | company's IT technician some computer skills |
| Top player | IDIS, AV tech, Everfocus, Hunt, Win4Net | IDIS, GeoVision, Win4Net |

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Ordering information

| Model | Std. Industrial CFIII | VA Industrial CFIII | ATA CF |
|-----------------------------|--|---------------------|------------------------------|
| Schedule | Available | Available | CS :ready in March MP:TBD |
| AP P/N coding rule | AP-CFxxxxE3xR-xxxx | AP-CFxxxxE3xR-xxxxJ | AP-CFxxxxH4xR-xxxxxx |
| 8x P/N coding rule | 8x.2xxxx.xxx0C | 8x.2xxxx.xxx2C | 8x.2xxxx.Wx00B |
| Ordering information | eFlash FTP: http://datasrv1.apacer.com/PM/E-Flash/Information(For_AML)/PM_information/3_ModelPN&ApacerPN/CF%20PN/SST/ | | |

Ordering information- ATA CF

| Capacity | | AP/N | with Label | with PVC |
|-----------------------|-------|--------------------|----------------|----------------|
| High speed | 256MB | AP-CF256MH4FR-NDNR | 81.20020.W400B | 81.20021.W400B |
| | 512MB | AP-CF512MH4FR-NDNR | 81.2A020.W400B | 81.2A021.W400B |
| | 1GB | AP-CF001GH4FR-NDNR | 81.2B020.W400B | 81.2B021.W400B |
| | 2GB | AP-CF002GH4FR-NDNR | 81.2E020.W400B | 81.2E021.W400B |
| | 4GB | AP-CF004GH4FR-NDNR | 81.2D020.W400B | 81.2D021.W400B |
| | 8GB | AP-CF008GH4FR-NDNR | 81.2D040.W400B | 81.2D041.W400B |
| Standard speed | 128MB | AP-CF128MH4ER-NDNR | 81.20010.W300B | 81.20011.W300B |
| | 256MB | AP-CF256MH4ER-NDNR | 81.2A010.W300B | 81.2A011.W300B |
| | 512MB | AP-CF512MH4ER-NDNR | 81.2B010.W300B | 81.2B011.W300B |
| | 1GB | AP-CF001GH4ER-NDNR | 81.2E010.W300B | 81.2E011.W300B |
| | 2GB | AP-CF002GH4ER-NDNR | 81.2D010.W300B | 81.2D011.W300B |
| | 16GB | AP-CF016GH4ER-NDNR | 81.2G040.W300B | 81.2G041.W300B |

Ordering information- ATA CF

| Capacity | | AP/N | with Label | with PVC |
|-----------------------|-------|------------------|----------------|----------------|
| High speed | 256MB | AP-CF256MH4FR-NR | 81.20020.W200B | 81.20021.W200B |
| | 512MB | AP-CF512MH4FR-NR | 81.2A020.W200B | 81.2A021.W200B |
| | 1GB | AP-CF001GH4FR-NR | 81.2B020.W200B | 81.2B021.W200B |
| | 2GB | AP-CF002GH4FR-NR | 81.2E020.W200B | 81.2E021.W200B |
| | 4GB | AP-CF004GH4FR-NR | 81.2D020.W200B | 81.2D021.W200B |
| | 8GB | AP-CF008GH4FR-NR | 81.2D040.W200B | 81.2D041.W200B |
| Standard speed | 128MB | AP-CF128MH4ER-NR | 81.20010.W100B | 81.20011.W100B |
| | 256MB | AP-CF256MH4ER-NR | 81.2A010.W100B | 81.2A011.W100B |
| | 512MB | AP-CF512MH4ER-NR | 81.2B010.W100B | 81.2B011.W100B |
| | 1GB | AP-CF001GH4ER-NR | 81.2E010.W100B | 81.2E011.W100B |
| | 2GB | AP-CF002GH4ER-NR | 81.2D010.W100B | 81.2D011.W100B |
| | 16GB | AP-CF016GH4ER-NR | 81.2G040.W100B | 81.2G041.W100B |

Warranty

- The Standard Industrial CFIII, Value Added Industrial CFIII, and ATA CF are covered by a Limited Three-Year Warranty.
- If you need further information, please refer to website <http://service.apacer.com>



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www.apacer.com

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