

Hermit series
INDUSTRIAL (Rugged Metal)
PCMCIA ATA Card

A PRO of Industrial Flash Memory Storage
www.apro-tw.com



Preliminary spec. sheet (081209-V2.1)

266X Industrial PCMCIA ATA Card
Read : 40MB/s Write : 17MB/s

HERMIT Series

Compatibility :



Supported O.S. :



Certification :



INDUSTRIAL
CompactFlash Card

INDUSTRIAL
PCMCIA ATA Card

INDUSTRIAL
micro IDE Flash Disk

INDUSTRIAL
Solid State Disk

INDUSTRIAL
micro SATA Flash Disk

INDUSTRIAL
Rugged USB Disk

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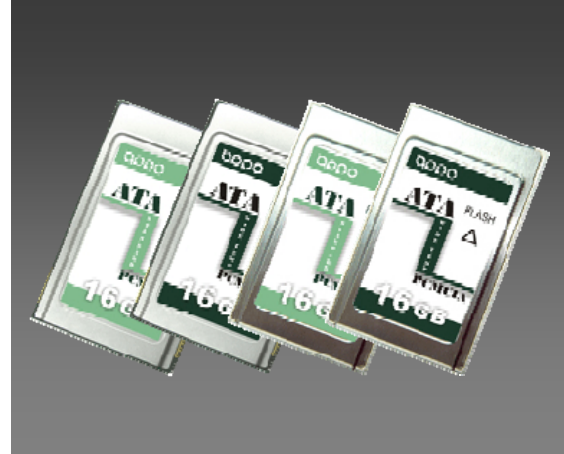
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APRO Co., Ltd.

Operating temperature supports optionally
Standard grade 0 °C ~ 70 °C and Industrial grade-40 °C ~ 85 °C

Features:

- SLC-NAND flash type technology
- Compatible with PC card standard and PCMCIA V.2.1
- Compatible with ATA/APAPI-6 standard
- PCMCIA Type II form-factor
- Optional for standard casing and rugged metal casing
- Capacity from 128MB up to 16GB
- Data transfer mode support PIO 0~6 and UDMA 0~5
- Performance up to 40MB/sec



Specifications:

◆ Compatibility	ATAPI-6 and True IDE mode
◆ Flash Technology	SLC-NAND flash type technology
◆ Form-factor	PCMCIA Type II
◆ Host Interface	68 pins
◆ Performance	
● Data transfer mode	PIO-4 mode or UDMA-4 mode (Default setting)
● Data transfer rate	66.6MB/sec under UDMA-4 mode 16.6MB/sec under PIO-4 mode
● Sequential read	40 MB/sec (Max. /with dual channel)
● Sequential write	17 MB/sec (Max. /with dual channel)
● Average access time	0.2ms (estimated)
◆ Environmental specification	
● Operating temperature	Standard grade 0 °C ~ 70 °C / Industrial grade-40 °C ~ 85 °C
● Non-operating temperature	Standard grade-20 °C ~ 80 °C / Industrial grade-50 °C ~ 95 °C
● Humidity	10% ~ 95% non-condensing
● Acoustic noise	0dB
● Vibration	15G compliance to MIL-STD-810F
● Shock	1,500G compliance to MIL-STD-810F
● Altitude	70,000 feet

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◆ Power consumption

- Power requirement +5V ± 10% / +3.3V ± 5%
- Reading mode 1 Channel 78mA(Max.) / 2 Channel 124mA(Max.) UDMA4 Mode
- Writing mode 1 Channel 67mA(Max.) / 2 Channel 121mA(Max.) UDMA4 Mode
- Sleeping mode 1 Channel 1.2mA(Max.) / 2 Channel 1.8mA(Max.) UDMA4 Mode

◆ Reliability

- Wear-leveling Static wear-leveling algorithms
- MTBF > 3,000,000 hours
- ECC Enhanced management 4-bits per 512bytes block
- Endurance > 2,000,000 cycles logically contributed by static wear-leveling and advanced bad sector management algorithms
- Data reliability < 1 non-recoverable error in 10¹⁴ bits read
- Data retention 10 years

◆ Physical specification

- Weight (max.)
 - Standard casing 43.0g/ 1.52oz
 - Rugged metal casing 60.0g/ 2.12oz
- Dimension(W x L x H) 85.6 x 54.0 x 5.0 (mm)

◆ Conformal coating

Option for special request

◆ Warranty

- Standard grade 3 years
- Industrial grade 5 years

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Part number list - Standard PCMCIA casing

Product picture	Capacity	0° C~ 70° C	-40° C~ 85° C
	128MB	SPAFC128M-HACSC-UF	WPAFC128M-HAISI-UF
	256MB	SPAFC256M-HACSC-UF	WPAFC256M-HAISI-UF
	512MB	SPAFC512M-HACSC-UF	WPAFC512M-HAISI-UF
	1GB	SPAFC001G-HACSC-UF	WPAFC001G-HAISI-UF
	2GB	SPAFC002G-HACSC-UF	WPAFC002G-HAISI-UF
	4GB	SPAFC004G-HACSC-UF	WPAFC004G-HAISI-UF
	8GB	SPAFC008G-HACSC-UF	WPAFC008G-HAISI-UF
	16GB	SPAFC016G-HACSC-UF	WPAFC016G-HAISI-UF

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micro IDE Flash Disk

Part number list - Rugged metal PCMCIA casing

Product Picture	Capacity	0° C~ 70° C	-40° C~ 85° C
	128MB	SRAFC128M-HACSC-UF	WRAFC128M-HAISI-UF
	256MB	SRAFC256M-HACSC-UF	WRAFC256M-HAISI-UF
	512MB	SRAFC512M-HACSC-UF	WRAFC512M-HAISI-UF
	1GB	SRAFC001G-HACSC-UF	WRAFC001G-HAISI-UF
	2GB	SRAFC002G-HACSC-UF	WRAFC002G-HAISI-UF
	4GB	SRAFC004G-HACSC-UF	WRAFC004G-HAISI-UF
	8GB	SRAFC008G-HACSC-UF	WRAFC008G-HAISI-UF
	16GB	SRAFC016G-HACSC-UF	WRAFC016G-HAISI-UF

INDUSTRIAL
Solid State Disk

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Remarks: The optional data-transfer modes and disk types are:

1. PF: optional as PIO-4 mode / Fixed disk type
2. PR: optional as PIO-4 mode / Removable disk type
3. PA: optional as PIO-4 mode / Fixed disk & Removable disk type auto-detection
4. UR: optional as UDMA-4 mode / Removable disk type
5. **UF: defaulted as UDMA-4 mode / Fixed disk type**
6. UA: optional as UDMA-4 mode / Fixed disk & Removable disk type auto-detection
7. AF: optional as UDMA & PIO mode auto-detection / Fixed disk type
8. AR: optional as UDMA & PIO mode auto-detection / Removable disk type
9. AA: optional as UDMA & PIO mode aAuto-detection / Fixed disk & Removable disk type auto-detection

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Part number decoder :

X1 X2 X3 X4 X5 X6 X7 X8 X9 – X11 X12 X13 X14 X15 – Z1 Z2 / C

X1 : Grade

S : Standard Grade – operating temp. 0° C ~ 70 ° C
W : Industrial Grade – operating temp.-40° C ~ 85 ° C

X13 : Controller grade

C : Commercial grade
I : Industrial grade

X2 : The material of case

P : Plastic frame kit
R : Rugged metal frame kit

X14 : Flash IC

S : Samsung SLC-NAND Flash IC

X3 X4 X5 : Product category

AFC : PCMCIA ATA Card

X15 : Flash IC grade / Type

C : Commercial grade
I : Industrial grade

X6 X7 X8 X9 : Capacity

128M: 128MB
256M: 256MB
512M: 512MB
001G: 1GB
002G: 2GB
004G: 4GB
008G: 8GB
016G: 16GB

Z1 Z2 : Data transfer rate

PF: optional as PIO-4 mode / Fixed disk type
PR: optional as PIO-4 mode / Removable disk type
PA: optional as PIO-4 mode / Fixed disk & Removable disk type Auto-detection
UR: optional as UDMA-4 mode / Removable disk type
UF: defaulted as UDMA-4 mode / Fixed disk type
UA: optional as UDMA-4 mode / Fixed disk & Removable disk type Auto-detection
AF: optional as UDMA & PIO mode Auto-detection / Fixed disk type
AR: optional as UDMA & PIO mode Auto-detection / Removable disk type
AA: optional as UDMA & PIO mode Auto-detection / Fixed disk & Removable disk type Auto-detection

X11 : Controller

H : Hyperstone (Hermit Series)

X12 : Controller version

A, B, C.....

C : Reserved for specific requirement

C : Conformal-coating

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