

# CHARIOT Series

## Industrial (Rugged Metal) High Capacity PCMCIA ATA Card



### Product features

- ✦ SLC - NAND type flash technology
- ✦ Compatible with PC card standard
- ✦ PCMCIA Type II form-factor
- ✦ Optional for standard casing and rugged metal casing
- ✦ Compatible with ATA/ATAPI-6 standard
- ✦ Data transfer mode support PIO 0-4 and UDMA 0-5
- ✦ Performance up to 36 MB/sec
- ✦ Capacity from 1GB up to 64GB

### Product specifications

<b>Compatibility</b>	✦ ATAPI-6 and True IDE mode	<b>Power consumption</b>	
<b>Flash technology</b>	✦ SLC-NAND type flash based	Power requirement	✦ +5V ± 10% / +3.3V ± 5%
<b>Form-factor</b>	✦ PCMCIA Type II form-factor	Reading mode	✦ 65 mA (Max.)
<b>Host Interface</b>	✦ Female 68 pins	Writing mode	✦ 95 mA (Max.)
<b>Performance</b>		Idle mode	✦ 6 mA (Max.)
Data transfer mode	✦ PIO-4 mode or UDMA-5 mode (def.)	<b>Reliability</b>	
Data transfer rate	✦ 100.0 MB/sec (ATA-6 / UDMA-5)	Wear-leveling	✦ Dynamic wear-leveling algorithms
	✦ 16.6 MB/sec (ATA-3 / PIO-4)	MTBF	✦ > 3,000,000 hours
Sequential read	✦ 36 MB/sec (Max. /with dual flash)	ECC	✦ 4 bits per 512bytes block
Sequential write	✦ 34 MB/sec (Max. /with dual flash)	Endurance	✦ > 2,000,000 cycles
Average access time	✦ 0.2 ms (estimated)	<b>Physical specification</b>	
<b>Environmental specification</b>		Weight (max.)	✦ Standard casing 43.0g/ 1.52 oz.
Operating temp.	✦ STD. 0°C ~ 70°C / IND. -40°C ~ +85°C		✦ Metal casing 60.0g/ 2.12 oz.
Non-operating temp.	✦ STD. -20°C ~ +80°C / IND. -50°C ~ +95°C	Dimension(W x L x H)	✦ 85.6 x 54.0 x 5.0 (mm)
Humidity	✦ 10% ~ 95% non-condensing	Grounding	✦ Plastic frame kit with EMI CLIPS CONTACT
Vibration	✦ 15G compliance to MIL-STD-810F	<b>Conformal coating</b>	✦ Option for special request
Shock	✦ 1,500G compliance to MIL-STD-810F	<b>Warranty</b>	
Altitude	✦ 70,000 feet	Standard grade	✦ 3 years
		Industrial grade	✦ 5 years

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

### Part number list - Industrial PCMCIA ATA card with standard plastic frame kit

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	1GB	SPAFC001G-KACSC-UF	WPAFC001G-KAISI-UF
	2GB	SPAFC002G-KACSC-UF	WPAFC002G-KAISI-UF
	4GB	SPAFC004G-KACSC-UF	WPAFC004G-KAISI-UF
	8GB	SPAFC008G-KACSC-UF	WPAFC008G-KAISI-UF
	16GB	SPAFC016G-KACSC-UF	WPAFC016G-KAISI-UF
	32GB	SPAFC032G-KACSC-UF	WPAFC032G-KAISI-UF
	64GB	SPAFC064G-KACSC-UF	WPAFC064G-KAISI-UF

Remark: Grounding / Plastic frame kit with EMI CLIPS CONTACT

### Part number list - Industrial PCMCIA ATA card with rugged metal frame kit

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	1GB	SRAFC001G-KACSC-UF	WRAFC001G-KAISI-UF
	2GB	SRAFC002G-KACSC-UF	WRAFC002G-KAISI-UF
	4GB	SRAFC004G-KACSC-UF	WRAFC004G-KAISI-UF
	8GB	SRAFC008G-KACSC-UF	WRAFC008G-KAISI-UF
	16GB	SRAFC016G-KACSC-UF	WRAFC016G-KAISI-UF
	32GB	SRAFC032G-KACSC-UF	WRAFC032G-KAISI-UF
	64GB	SRAFC064G-KACSC-UF	WRAFC064G-KAISI-UF

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

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

**UF: defaulted as UDMA-5 mode / Fixed disk type**

UR: optional as UDMA-5 mode / Removable disk type

UA: optional as UDMA-5 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

CF

Industrial CompactFlash Card

Part number decoder

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

CFast

Industrial CFast Card

Example

S P A F C 0 0 8 G — K A C S C — U F / C

ATA

Industrial PCMCIA ATA Card

**X1** ▶ Grade

**S** : Standard grade operating temp. 0° C ~ 70 ° C  
**W** : Industrial grade operating temp. -40° C ~ +85 ° C

**X11** ▶ Controller

**H** : Hyperstone (HERMIT Series)  
**K** : KTC (CHARIOT Series)

MIF

Industrial micro IDE Flash Module

**X2** ▶ The material of frame kit

**P** : Plastic frame kit  
**R** : Rugged metal frame kit

**X12** ▶ Controller version

**A,B,C,....**

MSE

Industrial micro SATA Flash Module

**X3 X4 X5** ▶ Product category

**AFC** : PCMCIA ATA flash card

**X13** ▶ Controller grade

**C** : Commercial grade  
**I** : Industrial grade

MUM

Industrial micro USB Module

**X6 X7 X8 X9** ▶ Capacity

**128M** : 128MB    **004G** : 4GB  
**256M** : 256MB    **008G** : 8GB  
**512M** : 512MB    **016G** : 16GB  
**001G** : 1GB        **032G** : 32GB  
**002G** : 2GB        **064G** : 64GB

**X14** ▶ Flash IC

**S** : Samsung SLC-NAND Flash IC

MPM

Industrial mini PCI-e Module

**X15** ▶ Flash IC grade

**C** : Commercial grade  
**I** : Industrial grade

SSD

Industrial Solid State Disk

**Z1 Z2** ▶ Data transfer rate and disk types

**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  
**UF: defaulted as UDMA-4 mode / Fixed disk type**  
**UR** : optional as UDMA-4 mode / Removable 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

**C** ▶

**C** : Conformal-coating

UED

Industrial Rugged Metal USB Flash Disk

SD

Industrial SD & SDHC Memory Card

AD

Industrial Adapter Card-Drive