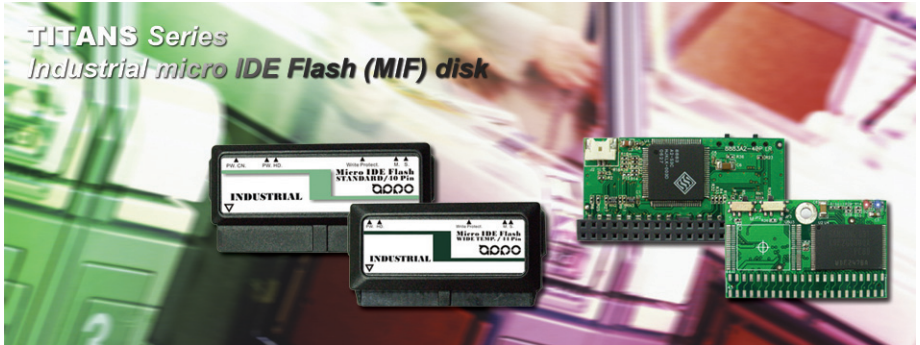


Product Specifications

www.apro-tw.com

TITANS Series Industrial micro IDE Flash (MIF) disk



Product features

- ❖ SLC - NAND type flash technology
- ❖ Standard 40/44-pin female IDE connector
- ❖ LED Indicators / Blue: Power on & Red: Operating
- ❖ Master / Slave selectable ; Write Protection Device by switch
- ❖ Compatible with ATA/ATAPI-5 standard
- ❖ Data transfer mode supports PIO 0~4 and UDMA 0~4
- ❖ Performance up to 25.9MB/sec
- ❖ Capacity from 32MB up to 4GB




Product specifications

Compatibility	❖ ATAPI-5 and True IDE mode	Power consumption	
Flash technology	❖ SLC-NAND type flash based	Power requirement	❖ +5V ± 10% / +3.3V ± 5%
Form-factor	❖ Vertical type or Horizontal R / L types	Reading mode	❖ 93.0mA(Max.)
Host Interface	❖ Female 40 or 44 pins	Writing mode	❖ 94.6mA(Max.)
Master/Slave setting	❖ By switch	Sleeping mode	❖ 59.5mA(Max.)
Write Protection	❖ By switch	Reliability	
LED Indicators	❖ Blue: Power on ; Red: Operating	Wear-leveling	❖ Dynamic wear-leveling algorithms
Performance		MTBF	❖ > 1,000,000 hours
Sequential read	❖ 25.9 MB/sec (Max. /with dual flash)	ECC	❖ 4-bits per 512bytes block
Sequential write	❖ 11.9 MB/sec (Max. /with dual flash)	Endurance	❖ > 2,000,000 cycles
Average access time	❖ 0.7ms (estimated)	Physical specification	
Environmental specification		Weight (max.)	❖ Vertical type: 20g(0.7oz) ❖ Horizontal type: 15g(0.53oz)
Operating temp.	❖ STD. 0°C ~ 70°C / IND. -40°C ~ 85°C	Dimension(W x L x H)	❖ 40-pin V. type: 57.00 x 28.60 x 10.20 ❖ 40-pin H. type: 51.85 x 26.50 x 8.70 ❖ 44-pin V. type: 49.95 x 27.35 x 9.9 ❖ 44-pin H. type: 45.05 x 27.00 x 5.75
Non-operating temp.	❖ STD. -20°C ~ 80°C / IND. -50°C ~ 95°C	Warranty	❖ STD. grade: 3 years/IND. grade: 5 years
Humidity	❖ 10% ~ 95% non-condensing		
Vibration	❖ 20G compliance to MIL-STD-810F		
Shock	❖ 1,500G compliance to MIL-STD-810F		
Altitude	❖ 70,000 feet		



Operating temperature supports Standard grade 0 °C ~ 70 °C

Part number list - IDE 40-pin

40-pin micro IDE flash disk Form-factor			
40-pin Vertical type		40-pin Horizontal-rightward	40-pin Horizontal-leftward
			
Operating temperature supports 0 °C ~ 70 °C			
Capacity	Form-factor	PIO-4 mode	UDMA-4 mode
32MB	Vertical	SPMIF032M-SECSC-0V-P	SPMIF032M-SECSC-0V-U
	Right	SBMIF032M-SECSC-0R-P	SBMIF032M-SECSC-0R-U
	Left	SBMIF032M-SECSC-0L-P	SBMIF032M-SECSC-0L-U
64MB	Vertical	SPMIF064M-SECSC-0V-P	SPMIF064M-SECSC-0V-U
	Right	SBMIF064M-SECSC-0R-P	SBMIF064M-SECSC-0R-U
	Left	SBMIF064M-SECSC-0L-P	SBMIF064M-SECSC-0L-U
128MB	Vertical	SPMIF128M-SECSC-0V-P	SPMIF128M-SECSC-0V-U
	Right	SBMIF128M-SECSC-0R-P	SBMIF128M-SECSC-0R-U
	Left	SBMIF128M-SECSC-0L-P	SBMIF128M-SECSC-0L-U
256MB	Vertical	SPMIF256M-SECSC-0V-P	SPMIF256M-SECSC-0V-U
	Right	SBMIF256M-SECSC-0R-P	SBMIF256M-SECSC-0R-U
	Left	SBMIF256M-SECSC-0L-P	SBMIF256M-SECSC-0L-U
512MB	Vertical	SPMIF512M-SECSC-0V-P	SPMIF512M-SECSC-0V-U
	Right	SBMIF512M-SECSC-0R-P	SBMIF512M-SECSC-0R-U
	Left	SBMIF512M-SECSC-0L-P	SBMIF512M-SECSC-0L-U
1GB	Vertical	SPMIF001G-SECSC-0V-P	SPMIF001G-SECSC-0V-U
	Right	SBMIF001G-SECSC-0R-P	SBMIF001G-SECSC-0R-U
	Left	SBMIF001G-SECSC-0L-P	SBMIF001G-SECSC-0L-U
2GB	Vertical	SPMIF002G-SECSC-0V-P	SPMIF002G-SECSC-0V-U
	Right	SBMIF002G-SECSC-0R-P	SBMIF002G-SECSC-0R-U
	Left	SBMIF002G-SECSC-0L-P	SBMIF002G-SECSC-0L-U
4GB	Vertical	SPMIF004G-SECSC-0V-P	SPMIF004G-SECSC-0V-U
	Right	SBMIF004G-SECSC-0R-P	SBMIF004G-SECSC-0R-U
	Left	SBMIF004G-SECSC-0L-P	SBMIF004G-SECSC-0L-U

INDUSTRIAL
CompactFlash Card

INDUSTRIAL
PCMCIA ATA Card

INDUSTRIAL
micro IDE Flash Disk

INDUSTRIAL
micro SATA Flash Disk

INDUSTRIAL
Solid State Disk

INDUSTRIAL
USB Flash Disk

INDUSTRIAL
Card Reader

Product Specifications

INDUSTRIAL CompactFlash Card

INDUSTRIAL PCMCIA ATA Card

INDUSTRIAL micro IDE Flash Disk

INDUSTRIAL micro SATA Flash Disk




INDUSTRIAL Solid State Disk

INDUSTRIAL Rugged Metal USB Flash Disk

INDUSTRIAL Adapter Card Reader

Operating temperature supports Industrial grade -40 °C ~ +85 °C

Part number list - IDE 40-pin

40-pin micro IDE flash disk Form-factor		
40-pin Vertical type	40-pin Horizontal-rightward	40-pin Horizontal-Leftward
		




Operating temperature supports -40 °C ~ +85 °C

Capacity	Form-factor	PIO-4 mode	UDMA-4 mode
32MB	Vertical	WPMIF032M-SEISI-0V-P	WPMIF032M-SEISI-0V-U
	Right	WBMIF032M-SEISI-0R-P	WBMIF032M-SEISI-0R-U
	Left	WBMIF032M-SEISI-0L-P	WBMIF032M-SEISI-0L-U
64MB	Vertical	WPMIF064M-SEISI-0V-P	WPMIF064M-SEISI-0V-U
	Right	WBMIF064M-SEISI-0R-P	WBMIF064M-SEISI-0R-U
	Left	WBMIF064M-SEISI-0L-P	WBMIF064M-SEISI-0L-U
128MB	Vertical	WPMIF128M-SEISI-0V-P	WPMIF128M-SEISI-0V-U
	Right	WBMIF128M-SEISI-0R-P	WBMIF128M-SEISI-0R-U
	Left	WBMIF128M-SEISI-0L-P	WBMIF128M-SEISI-0L-U
256MB	Vertical	WPMIF256M-SEISI-0V-P	WPMIF256M-SEISI-0V-U
	Right	WBMIF256M-SEISI-0R-P	WBMIF256M-SEISI-0R-U
	Left	WBMIF256M-SEISI-0L-P	WBMIF256M-SEISI-0L-U
512MB	Vertical	WPMIF512M-SEISI-0V-P	WPMIF512M-SEISI-0V-U
	Right	WBMIF512M-SEISI-0R-P	WBMIF512M-SEISI-0R-U
	Left	WBMIF512M-SEISI-0L-P	WBMIF512M-SEISI-0L-U
1GB	Vertical	WPMIF001G-SEISI-0V-P	WPMIF001G-SEISI-0V-U
	Right	WBMIF001G-SEISI-0R-P	WBMIF001G-SEISI-0R-U
	Left	WBMIF001G-SEISI-0L-P	WBMIF001G-SEISI-0L-U
2GB	Vertical	WPMIF002G-SEISI-0V-P	WPMIF002G-SEISI-0V-U
	Right	WBMIF002G-SEISI-0R-P	WBMIF002G-SEISI-0R-U
	Left	WBMIF002G-SEISI-0L-P	WBMIF002G-SEISI-0L-U
4GB	Vertical	WPMIF004G-SEISI-0V-P	WPMIF004G-SEISI-0V-U
	Right	WBMIF004G-SEISI-0R-P	WBMIF004G-SEISI-0R-U
	Left	WBMIF004G-SEISI-0L-P	WBMIF004G-SEISI-0L-U



Operating temperature supports Standard grade 0 °C ~ 70 °C

Part number list - IDE 44-pin

44-pin micro IDE flash disk Form-factor			
44-pin Vertical type		44-pin Horizontal-rightward	44-pin Horizontal-leftward
			
Operating temperature supports 0 °C ~ 70 °C			
Capacity	Form-factor	PIO-4 mode	UDMA-4 mode
32MB	Vertical	SPMIF032M-SECSC-4V-P	SPMIF032M-SECSC-4V-U
	Right	SBMIF032M-SECSC-4R-P	SBMIF032M-SECSC-4R-U
	Left	SBMIF032M-SECSC-4L-P	SBMIF032M-SECSC-4L-U
64MB	Vertical	SPMIF064M-SECSC-4V-P	SPMIF064M-SECSC-4V-U
	Right	SBMIF064M-SECSC-4R-P	SBMIF064M-SECSC-4R-U
	Left	SBMIF064M-SECSC-4L-P	SBMIF064M-SECSC-4L-U
128MB	Vertical	SPMIF128M-SECSC-4V-P	SPMIF128M-SECSC-4V-U
	Right	SBMIF128M-SECSC-4R-P	SBMIF128M-SECSC-4R-U
	Left	SBMIF128M-SECSC-4L-P	SBMIF128M-SECSC-4L-U
256MB	Vertical	SPMIF256M-SECSC-4V-P	SPMIF256M-SECSC-4V-U
	Right	SBMIF256M-SECSC-4R-P	SBMIF256M-SECSC-4R-U
	Left	SBMIF256M-SECSC-4L-P	SBMIF256M-SECSC-4L-U
512MB	Vertical	SPMIF512M-SECSC-4V-P	SPMIF512M-SECSC-4V-U
	Right	SBMIF512M-SECSC-4R-P	SBMIF512M-SECSC-4R-U
	Left	SBMIF512M-SECSC-4L-P	SBMIF512M-SECSC-4L-U
1GB	Vertical	SPMIF001G-SECSC-4V-P	SPMIF001G-SECSC-4V-U
	Right	SBMIF001G-SECSC-4R-P	SBMIF001G-SECSC-4R-U
	Left	SBMIF001G-SECSC-4L-P	SBMIF001G-SECSC-4L-U
2GB	Vertical	SPMIF002G-SECSC-4V-P	SPMIF002G-SECSC-4V-U
	Right	SBMIF002G-SECSC-4R-P	SBMIF002G-SECSC-4R-U
	Left	SBMIF002G-SECSC-4L-P	SBMIF002G-SECSC-4L-U
4GB	Vertical	SPMIF004G-SECSC-4V-P	SPMIF004G-SECSC-4V-U
	Right	SBMIF004G-SECSC-4R-P	SBMIF004G-SECSC-4R-U
	Left	SBMIF004G-SECSC-4L-P	SBMIF004G-SECSC-4L-U

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CompactFlash Card

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PCMCIA ATA Card

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micro IDE Flash Disk

INDUSTRIAL
micro SATA Flash Disk

INDUSTRIAL
Solid State Disk

INDUSTRIAL
USB Mini Flash Disk

INDUSTRIAL
Card Reader

Product Specifications

Operating temperature supports Industrial grade -40 °C ~ +85 °C

Part number list - IDE 44-pin

44-pin micro IDE flash disk Form-factor



Operating temperature supports -40 °C ~ +85 °C

Capacity	Form-factor	PIO-4 mode	UDMA-4 mode
32MB	Vertical	WPMIF032M-SEISI-4V-P	WPMIF032M-SEISI-4V-U
	Right	WBMIF032M-SEISI-4R-P	WBMIF032M-SEISI-4R-U
	Left	WBMIF032M-SEISI-4L-P	WBMIF032M-SEISI-4L-U
64MB	Vertical	WPMIF064M-SEISI-4V-P	WPMIF064M-SEISI-4V-U
	Right	WBMIF064M-SEISI-4R-P	WBMIF064M-SEISI-4R-U
	Left	WBMIF064M-SEISI-4L-P	WBMIF064M-SEISI-4L-U
128MB	Vertical	WPMIF128M-SEISI-4V-P	WPMIF128M-SEISI-4V-U
	Right	WBMIF128M-SEISI-4R-P	WBMIF128M-SEISI-4R-U
	Left	WBMIF128M-SEISI-4L-P	WBMIF128M-SEISI-4L-U
256MB	Vertical	WPMIF256M-SEISI-4V-P	WPMIF256M-SEISI-4V-U
	Right	WBMIF256M-SEISI-4R-P	WBMIF256M-SEISI-4R-U
	Left	WBMIF256M-SEISI-4L-P	WBMIF256M-SEISI-4L-U
512MB	Vertical	WPMIF512M-SEISI-4V-P	WPMIF512M-SEISI-4V-U
	Right	WBMIF512M-SEISI-4R-P	WBMIF512M-SEISI-4R-U
	Left	WBMIF512M-SEISI-4L-P	WBMIF512M-SEISI-4L-U
1GB	Vertical	WPMIF001G-SEISI-4V-P	WPMIF001G-SEISI-4V-U
	Right	WBMIF001G-SEISI-4R-P	WBMIF001G-SEISI-4R-U
	Left	WBMIF001G-SEISI-4L-P	WBMIF001G-SEISI-4L-U
2GB	Vertical	WPMIF002G-SEISI-4V-P	WPMIF002G-SEISI-4V-U
	Right	WBMIF002G-SEISI-4R-P	WBMIF002G-SEISI-4R-U
	Left	WBMIF002G-SEISI-4L-P	WBMIF002G-SEISI-4L-U
4GB	Vertical	WPMIF004G-SEISI-4V-P	WPMIF004G-SEISI-4V-U
	Right	WBMIF004G-SEISI-4R-P	WBMIF004G-SEISI-4R-U
	Left	WBMIF004G-SEISI-4L-P	WBMIF004G-SEISI-4L-U

Part number decoder

X1 X2 X3 X4 X5 X6 X7 X8 X9 — X11 X12 X13 X14 X15 — Y1 Y2 — Z1 / C

Example

S P M I F 5 1 2 M — S E C S C — 0 V — U / C

X1 ▶ Grade

S : Standard grade operating temp. 0° C ~ 70 ° C

W : Industrial grade operating temp. -40° C ~ 85 ° C

X2 ▶ The material of case

P : Plastic frame kit

B : Bare (Without case)

X3 X4 X5 ▶ Product category

MIF : micro IDE flash disk

X6 X7 X8 X9 ▶ Capacity

032M : 32MB

064M : 64MB

128M : 128MB

256M : 256MB

512M : 512MB

001G : 1GB

002G : 2GB

004G : 4GB

X11 ▶ Controller

S : 3S 88x3 A5 (Titans series)

X12 ▶ Controller version

A,B,C.....

X13 ▶ Controller grade

C : Commercial grade

I : Industrial grade

X14 ▶ Flash IC

S : Samsung SLC-NAND flash IC

X15 ▶ Flash IC grade / Type

C : Commercial grade

I : Industrial grade

Y1 Y2 ▶ MIF orient only

0V : 40-pin IDE Vertical MIF

0R : 40-pin IDE Right-oriented MIF

0L : 40-pin IDE Left-oriented MIF

4V : 44-pin IDE Vertical MIF

4R : 44-pin IDE Right-oriented MIF

4L : 44-pin IDE Left-oriented MIF

Z1 ▶ Data transfer rate

IDE interface is always Fixed Disk Mode

P : PIO-4 mode / fixed disk type

U : defaulted as **UDMA-4 mode / fixed disk type**

C ▶ Reserved for specific requirement

C : Conformal-coating