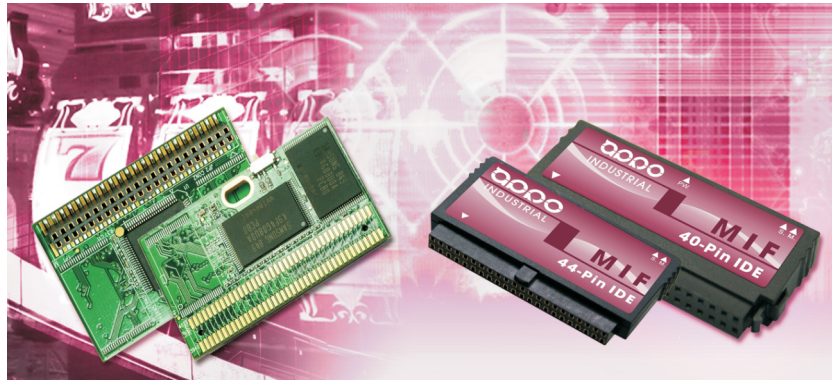


HERMIT Series

Industrial micro IDE Flash (MIF) Module w/S.M.A.R.T Function



Product features

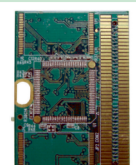
- SLC - NAND type flash technology
- Standard 40/44 pins female IDE connector
- Compact form-factor in vertical type and horizontal type
- Compatible with ATA/ATAPI-6 standard
- Master / Slave selectable
- S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology)
- Data transfer mode support PIO 0-4, MWDMA 0-2, UDMA 0-4
- Supports PC Card Memory mode or True IDE mode
- Performance up to: Read 40 MB/sec ; Write 20 MB/sec
- Capacities from 16MB up to 16GB

Product specifications

Compatibility	ATAPI-6 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 Rightward and leftward types	Reading mode	124 mA (Max.)
Host Interface	Female 40 or 44 pins	Writing mode	121 mA (Max.)
Master/Slave	By switch	Idle mode	1.8 mA (Max.)
Performance		Reliability	
Data transfer rate	PIO 0-4, MWDMA 0-2, UDMA 0-4 66.6 MB/sec (ATA-5 / UDMA-4) 16.6 MB/sec (ATA-3 / PIO-4)	Wear-leveling	Static wear-leveling algorithms
Sequential read	40 MB/sec (Max. / 32GB)	MTBF	> 3,000,000 hours
Sequential write	27.8 MB/sec (Max. / 32GB)	Endurance	> 2,000,000 cycles
Random access time	0.2ms (estimated)	ECC	4 bits per 512bytes block
Environmental specification		Data retention	10 Years
Operating temp.	STD. 0°C~70°C/IND. -40°C~+85°C	Physical specification	
Non-operating temp.	STD. -20°C~+80°C/IND. -50°C~+95°C	Weight (max.)	Vertical type: 20 g (0.7oz) Horizontal type: 15 g (0.53oz)
Humidity	10% ~ 95% non-condensing	Dimension(W x L x H)	40pin V. type: 60.20 x 27.79 x 6.40 40pin H. type: 55.00 x 32.40 x 7.40 40pin H. type: 55.00 x 32.40 x 7.40 44pin H. type: 48.00 x 32.60 x 4.50
Vibration	15G compliance to MIL-STD-810F	Conformal coating	Option for special request
Shock	1,500G compliance to MIL-STD-810F	Warranty	
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 micro IDE Flash Disk - IDE 40 pins - w/S.M.A.R.T function

Product Picture			
40pin Vertical type	40pin Horizontal-rightward	40pin Horizontal-leftward	
			
Data transfer mode setting by PIO-4 (P), UDMA-4 (U) or Auto detection (A)			
Capacity	Form-factor	STD. grade 0 °C ~ 70 °C	IND. Grade -40 °C ~ +85 °C
16MB	Vertical	SPMIF016M-HACTC-0V(P)(U)(A)	WPMIF016M-HAITI-0V(P)(U)(A)
	Right	SBMIF016M-HACTC-0R(P)(U)(A)	WBMIF016M-HAITI-0R(P)(U)(A)
	Left	SBMIF016M-HACTC-0L(P)(U)(A)	WBMIF016M-HAITI-0L(P)(U)(A)
32MB	Vertical	SPMIF032M-HACTC-0V(P)(U)(A)	WPMIF032M-HAITI-0V(P)(U)(A)
	Right	SBMIF032M-HACTC-0R(P)(U)(A)	WBMIF032M-HAITI-0R(P)(U)(A)
	Left	SBMIF032M-HACTC-0L(P)(U)(A)	WBMIF032M-HAITI-0L(P)(U)(A)
64MB	Vertical	SPMIF064M-HACTC-0V(P)(U)(A)	WPMIF064M-HAITI-0V(P)(U)(A)
	Right	SBMIF064M-HACTC-0R(P)(U)(A)	WBMIF064M-HAITI-0R(P)(U)(A)
	Left	SBMIF064M-HACTC-0L(P)(U)(A)	WBMIF064M-HAITI-0L(P)(U)(A)
128MB	Vertical	SPMIF128M-HACTC-0V(P)(U)(A)	WPMIF128M-HAITI-0V(P)(U)(A)
	Right	SBMIF128M-HACTC-0R(P)(U)(A)	WBMIF128M-HAITI-0R(P)(U)(A)
	Left	SBMIF128M-HACTC-0L(P)(U)(A)	WBMIF128M-HAITI-0L(P)(U)(A)
256MB	Vertical	SPMIF256M-HACTC-0V(P)(U)(A)	WPMIF256M-HAITI-0V(P)(U)(A)
	Right	SBMIF256M-HACTC-0R(P)(U)(A)	WBMIF256M-HAITI-0R(P)(U)(A)
	Left	SBMIF256M-HACTC-0L(P)(U)(A)	WBMIF256M-HAITI-0L(P)(U)(A)
512MB	Vertical	SPMIF512M-HACTC-0V(P)(U)(A)	WPMIF512M-HAITI-0V(P)(U)(A)
	Right	SBMIF512M-HACTC-0R(P)(U)(A)	WBMIF512M-HAITI-0R(P)(U)(A)
	Left	SBMIF512M-HACTC-0L(P)(U)(A)	WBMIF512M-HAITI-0L(P)(U)(A)
1GB	Vertical	SPMIF001G-HACTC-0V(P)(U)(A)	WPMIF001G-HAITI-0V(P)(U)(A)
	Right	SBMIF001G-HACTC-0R(P)(U)(A)	WBMIF001G-HAITI-0R(P)(U)(A)
	Left	SBMIF001G-HACTC-0L(P)(U)(A)	WBMIF001G-HAITI-0L(P)(U)(A)
2GB	Vertical	SPMIF002G-HACTC-0V(P)(U)(A)	WPMIF002G-HAITI-0V(P)(U)(A)
	Right	SBMIF002G-HACTC-0R(P)(U)(A)	WBMIF002G-HAITI-0R(P)(U)(A)
	Left	SBMIF002G-HACTC-0L(P)(U)(A)	WBMIF002G-HAITI-0L(P)(U)(A)
4GB	Vertical	SPMIF004G-HACTC-0V(P)(U)(A)	WPMIF004G-HAITI-0V(P)(U)(A)
	Right	SBMIF004G-HACTC-0R(P)(U)(A)	WBMIF004G-HAITI-0R(P)(U)(A)
	Left	SBMIF004G-HACTC-0L(P)(U)(A)	WBMIF004G-HAITI-0L(P)(U)(A)
8GB	Vertical	Do not support	Do not support
	Right	SBMIF008G-HACTC-0R(P)(U)(A)	WBMIF008G-HAITI-0R(P)(U)(A)
	Left	SBMIF008G-HACTC-0L(P)(U)(A)	WBMIF008G-HAITI-0L(P)(U)(A)

CFC
Industrial
CompactFlash
Card

CFA
Industrial
CFast Card

AFC
Industrial
PCMCIA ATA
Card

MIF
Industrial
micro IDE Flash
Module

MSF
Industrial
micro SATA Flash
Module

MUM
Industrial
micro USB Flash
Module

MPM
Industrial
mini PCIe Flash
Module

MSM
Industrial
mini SATA Flash
Module

SSD
Industrial
Solid State
Disk

UFD
Industrial
Rugged Metal
USB Flash Disk

SDC/H
Industrial
SD & SDHC
Memory Card

AD
Industrial
Adapter
Card-Drive

CFC
Industrial
CompactFlash
Card

CFA
Industrial
CFast Card

AFC
Industrial
PCMCIA ATA
Card

MIF
Industrial
micro IDE Flash
Module

MSF
Industrial
micro SATA Flash
Module

MUM
Industrial
micro USB Flash
Module

MPM
Industrial
mini PCIe Flash
Module

MSM
Industrial
mini SATA Flash
Module

SSD
Industrial
Solid State
Disk

UFD
Industrial
Rugged Metal
USB Flash Disk

SDC/H
Industrial
SD & SDHC
Memory Card

AD
Industrial
Adapter
Card-Drive

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

Part number list - Industrial micro IDE Flash Disk - IDE 44 pins - w/S.M.A.R.T function

Product Picture			
44pin Vertical type	44pin Horizontal-rightward	44pin Horizontal-leftward	
			
Data transfer mode setting by PIO-4 (P), UDMA-4 (U) or Auto detection (A)			
Capacity	Form-factor	STD. grade 0°C ~ 70°C	IND. Grade -40°C ~ +85°C
16MB	Vertical	SPMIF016M-HACTC-4V(P)(U)(A)	WPMIF016M-HAITI-4V(P)(U)(A)
	Right	SBMIF016M-HACTC-4R(P)(U)(A)	WBMIF016M-HAITI-4R(P)(U)(A)
	Left	SBMIF016M-HACTC-4L(P)(U)(A)	WBMIF016M-HAITI-4L(P)(U)(A)
32MB	Vertical	SPMIF032M-HACTC-4V(P)(U)(A)	WPMIF032M-HAITI-4V(P)(U)(A)
	Right	SBMIF032M-HASCTC-4R(P)(U)(A)	WBMIF032M-HAITI-4R(P)(U)(A)
	Left	SBMIF032M-HACTC-4L(P)(U)(A)	WBMIF032M-HAITI-4L(P)(U)(A)
64MB	Vertical	SPMIF064M-HACTC-4V(P)(U)(A)	WPMIF064M-HAITI-4V(P)(U)(A)
	Right	SBMIF064M-HACTC-4R(P)(U)(A)	WBMIF064M-HAITI-4R(P)(U)(A)
	Left	SBMIF064M-HACTC-4L(P)(U)(A)	WBMIF064M-HAITI-4L(P)(U)(A)
128MB	Vertical	SPMIF128M-HACTC-4V(P)(U)(A)	WPMIF128M-HAITI-4V(P)(U)(A)
	Right	SBMIF128M-HACTC-4R(P)(U)(A)	WBMIF128M-HAITI-4R(P)(U)(A)
	Left	SBMIF128M-HACTC-4L(P)(U)(A)	WBMIF128M-HAITI-4L(P)(U)(A)
256MB	Vertical	SPMIF256M-HACTC-4V(P)(U)(A)	WPMIF256M-HAITI-4V(P)(U)(A)
	Right	SBMIF256M-HACTC-4R(P)(U)(A)	WBMIF256M-HAITI-4R(P)(U)(A)
	Left	SBMIF256M-HACTC-4L(P)(U)(A)	WBMIF256M-HAITI-4L(P)(U)(A)
512MB	Vertical	SPMIF512M-HACTC-4V(P)(U)(A)	WPMIF512M-HAITI-4V(P)(U)(A)
	Right	SBMIF512M-HACTC-4R(P)(U)(A)	WBMIF512M-HAITI-4R(P)(U)(A)
	Left	SBMIF512M-HACTC-4L(P)(U)(A)	WBMIF512M-HAITI-4L(P)(U)(A)
1GB	Vertical	SPMIF001G-HACTC-4V(P)(U)(A)	WPMIF001G-HAITI-4V(P)(U)(A)
	Right	SBMIF001G-HACTC-4R(P)(U)(A)	WBMIF001G-HAITI-4R(P)(U)(A)
	Left	SBMIF001G-HACTC-4L(P)(U)(A)	WBMIF001G-HAITI-4L(P)(U)(A)
2GB	Vertical	SPMIF002G-HACTC-4V(P)(U)(A)	WPMIF002G-HAITI-4V(P)(U)(A)
	Right	SBMIF002G-HACTC-4R(P)(U)(A)	WBMIF002G-HAITI-4R(P)(U)(A)
	Left	SBMIF002G-HACTC-4L(P)(U)(A)	WBMIF002G-HAITI-4L(P)(U)(A)
4GB	Vertical	SPMIF004G-HACTC-4V(P)(U)(A)	WPMIF004G-HAITI-4V(P)(U)(A)
	Right	SBMIF004G-HACTC-4R(P)(U)(A)	WBMIF004G-HAITI-4R(P)(U)(A)
	Left	SBMIF004G-HACTC-4L(P)(U)(A)	WBMIF004G-HAITI-4L(P)(U)(A)
8GB	Vertical	Do not support	Do not support
	Right	SBMIF008G-HACTC-4R(P)(U)(A)	WBMIF008G-HAITI-4R(P)(U)(A)
	Left	SBMIF008G-HACTC-4L(P)(U)(A)	WBMIF008G-HAITI-4L(P)(U)(A)

Part number decoder

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

Example

W P M I F 5 1 2 M — H A I T I — 0 R U / C

X1 ➤ Grade

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

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

X14 ➤ Flash IC

T : Toshiba SLC-NAND flash IC

X2 ➤ The material of casing

B : Bare (without casing)

P : Plastic casing

X15 ➤ Flash IC grade (Function)

C : Commercial grade

I : Industrial grade

X3 X4 X5 ➤ Product category

MIF : micro IDE flash module

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

X6 X7 X8 X9 ➤ Capacity

016M : 16MB 001G : 1GB

032M : 32MB 002G : 2GB

064M : 64MB 004G : 4GB

128M : 128MB 008G : 8GB

256M : 256MB

512M : 512MB

X11 ➤ Controller

H : Hyperstone (HERMIT Series)

X12 ➤ Controller version

A,B,C.....

X13 ➤ Controller grade

C : Commercial grade

I : Industrial grade

Z1 ➤ Data transfer rate and disk type

IDE interface is always Fixed Disk Mode

P : PIO-4 mode / fixed disk type

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

A : optional as UDMA & PIO mode auto-detection

C ➤ Reserved for specific requirement

C : Conformal-coating

CFC
Industrial
CompactFlash
Card

CFA
Industrial
CFast Card

AFC
Industrial
PCMCIA ATA
Card

MIF
Industrial
micro IDE Flash
Module

MSF
Industrial
micro SATA Flash
Module

MUM
Industrial
micro USB Flash
Module

MPM
Industrial
mini PCIe Flash
Module

MSM
Industrial
mini SATA Flash
Module

SSD
Industrial
Solid State
Disk

UFD
Industrial
Rugged Metal
USB Flash Disk

SDC/H
Industrial
SD & SDHC
Memory Card

AD
Industrial
Adapter
Card-Drive

CFC
Industrial
CompactFlash
Card

CFA
Industrial
CFast Card

AFC
Industrial
PCMCIA ATA
Card

MIF
Industrial
micro IDE Flash
Module

MSF
Industrial
micro SATA Flash
Module

MUM
Industrial
micro USB Flash
Module

MPM
Industrial
mini PCIe Flash
Module

MSM
Industrial
mini SATA Flash
Module

SSD
Industrial
Solid State
Disk

UFD
Industrial
Rugged Metal
USB Flash Disk

SDC/H
Industrial
SD & SDHC
Memory Card

AD
Industrial
Adapter
Card-Drive