

THEMIS-B Series

Industrial micro USB Module (MUM)
supports Write Protect Function



Product features

- ❖ 2x5 header, x86 internal USB standard
- ❖ Supports write protect function by switch
- ❖ Complies with Microsoft Vista Ready-Boost® requirements
- ❖ Vertical form-factor: 2x5 2.54 mm pitch pin connector
- ❖ Horizontal 2 form-factors: 2x5 2.54 mm & 2.00 mm pitch pin connector
- ❖ Vertical : Capacities from 1GB up to 4GB (Single CH.)
- ❖ Horizontal : Capacities from 1GB up to 8GB (Dual CH.)
- ❖ Default as Removable disk, Fixed disk optional
- ❖ Maximum sequential read speed 34.9 MB/sec
- ❖ Maximum sequential write speed 26.1 MB/sec

Product specifications

- | | | | |
|------------------------------------|--|--------------------------------|--|
| Compatibility | ❖ USB 2.0 and USB 1.1 backwards compatible | Power consumption | ❖ 5V±10% via on board USB port |
| Flash technology | ❖ SLC-NAND flash type technology | Reading mode | ❖ 79.3 mA (Max.) |
| Form-factor | ❖ Standard & Low profile Horizontal Type with fixed hole | Writing mode | ❖ 92.0 mA (Max.) |
| Host Interface | ❖ Standard 10 pins 2.54 mm pin pitch USB female connector | Idle mode | ❖ 39.2 mA (Max.) |
| | ❖ Low-profile 10 pins 2.00 mm pin pitch USB female connector | Reliability | |
| Performance | | Wear-leveling | ❖ Dynamic wear-leveling algorithms |
| Data transfer rate | ❖ USB 2.0 and USB 1.1 backwards compatible | MTBF | ❖ > 2,000,000 hours |
| Sequential read | ❖ 34.9 MB/sec (Max.) | ECC | ❖ 14 bits per 512 bytes block to 30 bits per 1 Kbytes block |
| Sequential write | ❖ 26.1 MB/sec (Max.) | Physical specification | |
| Average access time | ❖ 1.1 ms (estimated) | Weight (max.) | ❖ Vertical type : 15 g ± 1 g / 0.53 oz.
❖ Horizontal type : 10 g ± 1 g / 0.35 oz. |
| Environmental specification | | Dimension(W x L x H) | |
| Operating temp. | ❖ STD. 0°C ~ 70°C / IND. -40°C ~ +85°C | Vert. 2.54mm pitch pin | 26.90 x 30.60 x 6.60 (mm) |
| Non-operating temp. | ❖ STD. -20°C ~ +80°C / IND. -50°C ~ +95°C | Hori. STD. 2.54mm pitch pin | 22.00 x 35.70 x 9.50 (mm) |
| Humidity | ❖ 10% ~ 95% non-condensing | Hori. Low pro. 2.0mm pitch pin | 22.00 x 35.70 x 6.40 (mm) |
| Vibration | ❖ 6Grms 30 mins X, Y, Z axis
10, 100, 500 frequency (Hz) | Conformal coating | ❖ Option for special request |
| Acoustic noise | ❖ 0dB | Warranty | |
| OS supported | ❖ Microsoft Windows XP Embedded,
Linux and DOS | Standard grade | ❖ 3 years |
| | | Industrial grade | ❖ 5 years |


Write protect function ❖ by switch

Write protect switch on Ver. type MUM




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


Part number list - Vertical type standard form factor

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	1GB	SPMUM001G-EBCTC-VSR(F)	WPMUM001G-EBITI-VSR(F)
	2GB	SPMUM002G-EBCTC-VSR(F)	WPMUM002G-EBITI-VSR(F)
	4GB	SPMUM004G-EBCTC-VSR(F)	WPMUM004G-EBITI-VSR(F)

Part number list - Horizontal type standard form factor

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	1GB	SBMUM001G-EBCTC-HSR(F)	WBMUM001G-EBITI-HSR(F)
	2GB	SBMUM002G-EBCTC-HSR(F)	WBMUM002G-EBITI-HSR(F)
	4GB	SBMUM004G-EBCTC-HSR(F)	WBMUM004G-EBITI-HSR(F)
	8GB	SBMUM008G-EBCTC-HSR(F)	WBMUM008G-EBITI-HSR(F)

Part number list - Horizontal type low profile form factor

Product Picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	1GB	SBMUM001G-EBCTC-HLR(F)	WBMUM001G-EBITI-HLR(F)
	2GB	SBMUM002G-EBCTC-HLR(F)	WBMUM002G-EBITI-HLR(F)
	4GB	SBMUM004G-EBCTC-HLR(F)	WBMUM004G-EBITI-HLR(F)
	8GB	SBMUM008G-EBCTC-HLR(F)	WBMUM008G-EBITI-HLR(F)

**Remarks: The optional disk types are -
R: defaulted as Removable disk type**

F: Fixed disk type

CF

Industrial CompactFlash Card

Part number decoder

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

CFast

Industrial CFast Card

Example

W P M U M 0 0 4 G — E B I T I — V S R 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

X14 ▶ **Flash IC**

T : Toshiba SLC-NAND flash IC

MIF

Industrial micro IDE Flash Module

X2 ▶ **The material of casing**

B : Bare (without casing)

P : Plastic casing

X15 ▶ **Flash IC grade**

C : Commercial grade

I : Industrial grade

MSE

Industrial micro SATA Flash Module

X3 X4 X5 ▶ **Product category**

MUM : micro USB module

Y1 Y2 ▶ **MUM orient only**

VS : Vertical type standard form factor

HS : Horizontal type standard form factor

HL : Horizontal type low profile form factor

MUM

Industrial micro USB Module

X6 X7 X8 X9 ▶ **Capacity**

001G : 1GB

002G : 2GB

004G : 4GB

008G : 8GB

Z ▶ **Disk types**

R: defaulted as Removable disk type

F: Fixed disk type

MPM

Industrial mini PCI-e Module

X11 ▶ **Controller**

E : ITE (THEMIS Series)

C ▶ **Reserved for specific requirement**

C : Conformal-coating

SSD

Industrial Solid State Disk

X12 ▶ **Controller version**

A,B,C,.....

UED

Industrial Rugged Metal USB Flash Disk

X13 ▶ **Controller grade**

C : Commercial grade

I : Industrial grade

SD

Industrial SD & SDHC Memory Card

AD

Industrial Adapter Card-Drive