

DEMETER Series

Industrial micro USB Module (MUM)



Product features


- ❖ SLC - NAND type flash technology
- ❖ 2x5 header, x86 internal USB standard
- ❖ Vertical : 2x5 2.54 mm pitch pin connector
- ❖ Horizontal : 2 solutions of 2x5 2.54 mm & 2.00 mm pitch pin connector
- ❖ Complies with Microsoft Vista Ready-Boost® requirements
- ❖ Fixed disk mode configuration (not a removable disk)
- ❖ Advanced error detection and error correction algorithms
- ❖ High-speed USB 2.0 interface; backward compatible with USB 1.1
- ❖ Vertical : Capacities from 128MB up to 4GB
- ❖ Horizontal : Capacities from 128MB up to 8GB
- ❖ Performance up to 32.0 MB/sec

Product specifications


- | | | | |
|------------------------------------|--|--------------------------------|--|
| Compatibility | ❖ USB 2.0 and USB 1.1 backwards compatible | Power consumption | |
| Flash technology | ❖ SLC-NAND flash type technology | Power requirement | ❖ 5V±10% via on board USB port |
| Form-factor | ❖ Standard & Low profile Horizontal Type with fixed hole | Reading mode | ❖ 110.0 mA (Max.) |
| Host Interface | ❖ Standard 10 pins 2.54 mm pin pitch USB female connector
❖ Low-profile 10 pins 2.00 mm pin pitch USB female connector | Writing mode | ❖ 92.0 mA (Max.) |
| Performance | | Idle mode | ❖ 43.0 mA (Max.) |
| Data transfer rate | ❖ USB 2.0 and USB 1.1 backwards compatible | Reliability | |
| Sequential read | ❖ 32.0 MB/sec (Dual Channel) | Wear-leveling | ❖ Dynamic wear-leveling algorithms |
| Sequential write | ❖ 16.9 MB/sec (Dual Channel) | MTBF | ❖ > 3,000,000 hours |
| Average access time | ❖ 0.6 ms (estimated) | ECC | ❖ 8 bits per 512 bytes block |
| Environmental specification | | Endurance | ❖ > 2,000,000 cycles |
| 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 : 15 g ± 1 g / 0.53 oz.
❖ Horizontal type : 10 g ± 1 g / 0.35 oz. |
| Humidity | ❖ 10% ~ 95% non-condensing | Dimension(W x L x H) | |
| Vibration | ❖ 15G compliance to MIL-STD-810F | Vert. 2.54mm pitch pin | ❖ 34.20 x 15.40 x 6.30 (mm) |
| Shock | ❖ 1,500G compliance to MIL-STD-810F | Hori. STD. 2.54mm pitch pin | ❖ 37.85 x 26.75 x 9.00 (mm) |
| Altitude | ❖ 70,000 feet | Hori. Low pro. 2.0mm pitch pin | ❖ 37.85 x 26.75 x 5.90 (mm) |
| Acoustic noise | ❖ 0dB | Conformal coating | ❖ Option for special request |
| OS supported | ❖ Microsoft Windows Vista, Microsoft Win CE, Microsoft Windows XP Pro, Microsoft Windows XP Embedded, Microsoft Windows for Point of Service, Microsoft Windows Server 2003, Linux and DOS | Warranty | |
| | | 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 - Vertical type standard form factor

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SPMUM128M-UBCSC-VS	WPMUM128M-UBISI-VS
	256MB	SPMUM256M-UBCSC-VS	WPMUM256M-UBISI-VS
	512MB	SPMUM512M-UBCSC-VS	WPMUM512M-UBISI-VS
	1GB	SPMUM001G-UBCSC-VS	WPMUM001G-UBISI-VS
	2GB	SPMUM002G-UBCSC-VS	WPMUM002G-UBISI-VS
	4GB	SPMUM004G-UBCSC-VS	WPMUM004G-UBISI-VS

Part number list - Horizontal type standard form factor

Product picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SBMUM128M-UBCSC-HS	WBMUM128M-UBISI-HS
	256MB	SBMUM256M-UBCSC-HS	WBMUM256M-UBISI-HS
	512MB	SBMUM512M-UBCSC-HS	WBMUM512M-UBISI-HS
	1GB	SBMUM001G-UBCSC-HS	WBMUM001G-UBISI-HS
	2GB	SBMUM002G-UBCSC-HS	WBMUM002G-UBISI-HS
	4GB	SBMUM004G-UBCSC-HS	WBMUM004G-UBISI-HS
8GB	SBMUM008G-UBCSC-HS	WBMUM008G-UBISI-HS	

Part number list - Horizontal type low profile form factor

Product Picture	Capacity	0°C ~ 70°C	-40°C ~ +85°C
	128MB	SBMUM128M-UBCSC-HL	WBMUM128M-UBISI-HL
	256MB	SBMUM256M-UBCSC-HL	WBMUM256M-UBISI-HL
	512MB	SBMUM512M-UBCSC-HL	WBMUM512M-UBISI-HL
	1GB	SBMUM001G-UBCSC-HL	WBMUM001G-UBISI-HL
	2GB	SBMUM002G-UBCSC-HL	WBMUM002G-UBISI-HL
	4GB	SBMUM004G-UBCSC-HL	WBMUM004G-UBISI-HL
8GB	SBMUM008G-UBCSC-HL	WBMUM008G-UBISI-HL	

CF

Industrial CompactFlash Card

Part number decoder

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

Example

S P M U M 5 1 2 M — U B C S C — V S / 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 casing**

B : Bare (without casing)

P : Plastic casing

X3 X4 X5 ▶ **Product category**

MUM : micro USB module

X6 X7 X8 X9 ▶ **Capacity**

128M : 128MB **001G** : 1GB

256M : 256MB **002G** : 2GB

512M : 512MB **004G** : 4GB

008G : 8GB

X11 ▶ **Controller**

U : USBest (DEMETER 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**

C : Commercial grade

I : Industrial grade

Y1 Y2 ▶ **MUM orient only**

VS : Vertical type standard form factor

HS : Horizontal type standard form factor

HL : Horizontal type low profile form factor

C ▶ **Reserved for specific requirement**

C : Conformal-coating

CFast

Industrial CFast Card

ATA

Industrial PCMCIA/ATA Card

MIF

Industrial micro IDE Flash Module

MSE

Industrial micro SATA Flash Module

MUM

Industrial micro USB Module

MPM

Industrial mini PCI-e Module

SSD

Industrial Solid State Disk

UED

Industrial Rugged Metal USB Flash Disk

SD

Industrial SD & SDHC Memory Card

AD

Industrial Adapter Card-Drive