

# Industrial Flash Module Series

## The Best Flash Storage Solutions-iCF 1000+ & iFM/IFP 4000+/ 4400+

### Points

- Noiseless
- High reliability-Power Cycling
- ISP (In System Programming)upgrade
- Better shock durability
- Low power consumption
- To operate under high temperature and low temperature

### ISP (In System Programming) Architecture

The ISP architecture greatly enables iCF/EDC 4000 series to achieve upgradeable firmware for new application requirements.

### Power Cycling

A strong Power Cycling management enhances data integrity and reliability. The new 4000 series passes complete and non-stopping power cycling tests more than 3000 times to achieve the high standard requirement.

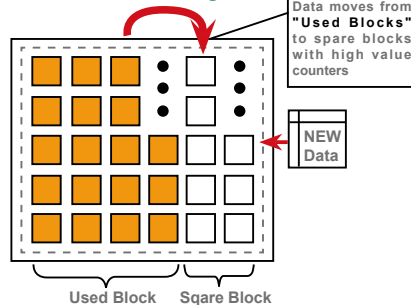
Target Device	EDC 4000 40-pin 2 GB, dual
OS	Windows® XP Embedded
Motherboard	ASUS A7N8X
Power failure	3,000
Test result	pass



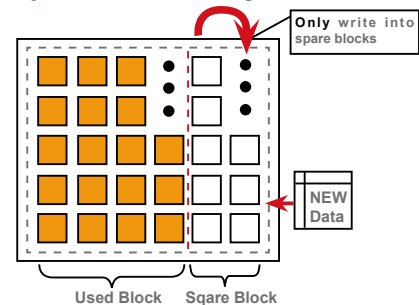
### Static Wear-Leveling

The Static Wear-Leveling algorithm evenly distributes the data over the entire disk and greatly enables to extend product longevity. The Static Wear-Leveling is calculated to beat least four times the programming endurance of the dynamic wear-leveling.

#### •Static Wear-Leveling



#### •Dynamic Wear-Leveling



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### Ordering Information






IFD-180A[T]-[C]: 1.8" IDE Industrial Flash Disk, RoHS  
 IFD-250A[T]-[C]: 2.5" IDE Industrial Flash Disk, RoHS  
 [T]: Support operation temperature code:  
 [I]: Industrial level (-10°C~70°C) ;  
 [W]: Wide temperature level (-40°C~85°C)  
 [C]: Capacity code: 32MB, 64MB, 128MB...32GB

#### IFD (Industrial Flash Disk) Product Line





Capacity	32 MB~32 GB	
Form factor	0°C ~ 70°C	IFD-180A-xxxx: 1.8" disk form factor IFD-250A-xxxx: 2.5" disk form factor
	-40°C ~ 85°C	IFD-180W-xxxx: 1.8" disk form factor IFD-250W-xxxx: 2.5" disk form factor
Connector	44-pin, 2.54 mm pitch IDE	
Dimensions (WxHxD) mm	IFD-180A/W-xxxx: 78 x 54.3 x 7.6 IFD-250A/W-xxxx: 100.2 x 69.8 x 9.2	
Housing	IFD-180A: ABS Mechanical Cover IFD-250A: Al-Mg Alloy	
Operating environment	0°C ~ 70°C for industrial version -40°C ~ 85°C for Wide-Temp. version	
Orientation endurance	Shock: 1000 G, Vibration: 15 G	
Reliability	IDE compatible Support auto stand-by and sleep mode Built-in ECC (Error Correction Code) function Built-in embedded flash file system Dynamic wear-leveling algorithms to substantially increase longevity of flash media	

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## iCF/iFM Series Specification

Item	iCF 1000	iCF 1000+	iFM 4000/iFM 4400 iFP-2000	iFM 4000+/iFM4400+ iFP-2000+	iFM-3000I		
Picture							
Part no.	-10°C~+70°C -40°C~+85°C	ICF-1000I-xxx ICF-1000W-xxx	ICF-1000IP(S/D)-xxx ICF-1000WP(S/D)-xxx	IFM-4000I-xxx/IFM-4400I-xxx IFP-2000I-xxx IFM-4000W-xxx/IFM-4400W-xxx IFP-2000W-xxx	IFM-4000IP(S/D)-xxx/IFM-4400IP(S/D)-xxx IFP-2000IP(S/D)-xxx IFM-4000WP(S/D)-xxx/IFM-4400WP(S/D)-xxx IFP-2000WP(S/D)-xxx	IFM-3000IS N/A	
Capacities	32 MB~8 GB		128 MB~8 GB	32 MB~8 GB	128 MB~8 GB	128 MB ~ 8 GB	
Interface	50-pin CF Type1		40-pin or 44-pin IDE/ATA		Serial ATA I		
IDE transfer mode	PIO mode 0-4 MwDMA mode 0-2 UltraDMA mode 0-2		PIO mode 0-6 MwDMA mode 0-4 UltraDMA mode 0-4		PIO Mode 0-4 MwDMA Mode 0-2 UltraDMA Mode 0-4		
Data transfer rate	32 MB~2 GB(single): Read-10 MB/sec./Write-6 MB/sec. 2 GB~8 GB(dual): Read-20 MB/sec./Write-11 MB/sec.		32 MB~2 GB(single): Read-20 MB/sec./Write-8 MB/sec. 1 GB~8 GB(dual): Read-40 MB/sec./Write-20 MB/sec.		32 MB~2 GB(single): Read-10 MB/sec./Write-6 MB/sec. 2 GB~8 GB(dual): Read-20 MB/sec./Write-11 MB/sec.	32 MB~2 GB(single): Read-20 MB/sec./Write-8 MB/sec. 1 GB~8 GB(dual): Read-40 MB/sec./Write-20 MB/sec.	128MB~8GB (single) Read-20 MB/ sec. Write-20 MB/sec.
Protocol mode	PCMCIA v2.1 and PC card v2.1 ATA standard compatible		PCMCIA v2.1 and PC card v3.0 ATA standard compatible		N/A		
Access mode	Memory mode, I/O mode, Ture-IDE mode						
Storage temp.	-45°C~+95°C						
Humidity	10%~95% non-condensing						
Vibration	5 G(7~2000 Hz)					5 G(7~500 Hz)	
Shock	50 G/10 ms						
ECC technology	High reliability based on the internal ECC function						
MTBF	>3,000,000 hours						
R/W endurance	2,000,000 times						
Wear-leveling	Support						
DC input voltage	+3.3V/+5V single power supply operation					+5V single power supply operation	
Power mode	Auto stand-by and sleep mode						
Power consumption	150 mA(max.)					230 mA(max.)	
Enclosure material	CF and plastic frame with metal cover					PC mechanical cover and UL-9	
Dimensions	42.8x36.4x3.3 mm(WxLxH)		Vertical 40-pin:60.2x27.8x6.4 mm ; Vertical 44-pin:50.3x27.3x5.8 mm Horizontal 40-pin:55x32.4x9 mm ; Horizontal 44-pin:48.2x32.6x8.6 mm		21.00 x 39.35 x 8.00 mm (WxLxH)		
Certificate	CE,FCC,ROHS						

## iFD Series Specification

Item	iFD-2500	iFD-M250I	iFD-2500C(2500W)	iFD-2500I	
Picture					
Part no.	-10°C~+70°C -40°C~+85°C	IFD-2500I-xxx IFD-2500W-xxx	IFD-M250I-xxx N/A	IFD-2500CS-xxx/IFD-2500CD-xxx IFD-2500WS-xxx/IFD-2500WD-xxx	IFD-2500IS-xxx N/A
Capacities	32 MB~8 GB		128 MB~8 GB	128 MB~8 GB	8 GB~128 GB
Interface	44-pin(2.0 mm) IDE/ATA			Serial ATA I	Serial ATA II
Transfer mode	PIO mode 0-4 MwDMA mode 0-2 UltraDMA mode 0-2		PIO mode 0-6 MwDMA mode 0-2 UltraDMA mode 0-4	N/A	N/A
Burst speed rate	66.6 MB/sec.		N/A	150 MB/sec.	300 MB/sec.
Data transfer rate(max.)	Read-30 MB/sec. Write-22 MB/sec.		Single: Read-18MB/sec. Write-7MB/sec. Dual: Read-38MB/sec. Write-18MB/sec.	Single: Read-20MB/sec. Write-20MB/sec. Dual: Read-30MB/sec. Write-30MB/sec.	Read-60 MB/sec. Write-40 MB/sec.
Storage temp.	-45°C~+95°C				
Humidity	10%~95% non-condensing				
Vibration	2 G(7~700 Hz)				
Shock	1500 G/0.5 ms				
ECC technology	High reliability based on the internal ECC function				
MTBF	>3,000,000 hours				
R/W endurance	2,000,000 times				
Wear-leveling	Support				
DC input voltage	+5V single power supply operation				
Enclosure material	Metal mechanical cover				
Dimensions	69.8x100.1x9.5 mm(WxLxH)			69.63x99.88x9.3 mm(WxLxH)	
Certificate	CE,FCC,ROHS				