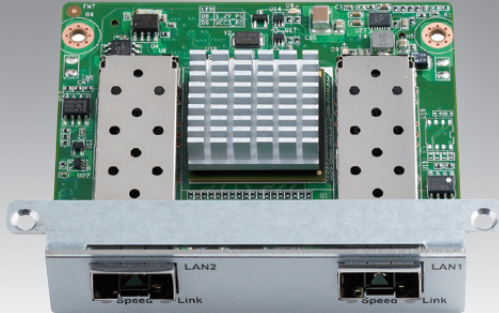


# FMM Series

## Extension Modules for Advantech CPU Boards

NEW



### Features

- PCIe based extension modules for ATCA CPU & RTM boards
- Implicit e-keying support
- Ideal to add additional I/O or customer-specific functionality to a standard product:
  - Different or additional I/O on a blade
  - Accelerators and offload engines to a platform
  - Backplane fabric ports on a blade
- FRU EEPROM on mezzanine for management
- Smaller, lower power and less expensive than AMC modules



### Introduction

Advantech's Fabric Mezzanine Modules (FMM) provide additional flexibility to Advantech ATCA CPU and RTM boards. Additional flexibility can be I/O ports such as 10GE SFP+ ports, 40G networking, CGA server type graphics module, PCIe express based offload, as well various Fabric Interfaces for ATCA CPU boards. Fabric Mezzanine Modules facilitate ease of system customization by using standard CPU boards and RTM's.

Fabric Mezzanine Modules have a PCIe x8 or x16 high speed local CPU / processor interface, which can be routed to local resources, or ATCA Zone 2/3. Advantech has defined two types of modules, Fabric mezzanine Type I and Fabric mezzanine Type II, offering different functionality dependent on the host board. Type I FMMs are internal mezzanines with PCIe and fabric connectivity, provide 4x 4 lanes custom fabric, such as XAU1, KR, or KR4. Type II FMMs have the same PCB shape as Type I modules, but support I/O connectors and front panel mounting. With one PCIe x16 or two PCIe x8 gen.3 ports routed to the front CPU blade, the FMM socket is a perfect solution for I/O port expansion, and also customer-defined acceleration and interfaces. As FMM modules are less complex than AMC modules, customers can deploy faster with a customized design.

FMM-5001B



FMM-5001F



FMM-5001Q



FMM-5002



FMM-5004M



FMM-5006



## Specifications

Main Chip / FMM type	<b>Fabric mezzanine type I*</b>						
	FMM-5001B	Intel 82599EB					
	FMM-5001Q	4 x Intel 82599ES					
	FMM-5004M	Mellanox CX3					
	FMM-5004M	Mellanox CX3					
	<b>Fabric mezzanine type II</b>						
	FMM-5001F	Intel 82599ES					
	FMM-5002	Silicon Motion SM75					
Management	EEPROM FRU	Microchip 24LC32A					
	Thermal IC	TI TMP75AIDR					
Protocol / I/O ports	FMM-5001B	Dual ports XAU1 to backplane					
	FMM-5001F	2 SFP+					
	FMM-5001Q	Dual ports 4 x KR to backplane					
	FMM-5002	VGA					
	FMM-5004M	Dual ports KR4 to backplane					
	FMM-5006	Quick Assist					
Power Requirement		FMM-5001B 7.35W	FMM-5001F 9.29W	FMM-5001Q 29.4W	FMM-5002 4.54W	FMM-5004M 6.8W	FMM-5006 23.12W
Physical Characteristics	Dimensions (W x D)	Single Size: 75 x 64 mm: FMM-5001B, FMM-5001F, FMM-5002, FMM-5004M, FMM-5006 Double Size: 150 x 64 mm: FMM-5001Q					
	Weight	FMM-5001B 75g	FMM-5001F 75g	FMM-5001Q 90g	FMM-5002 60g	FMM-5004M 35g	FMM-5006 75g
Environment	Operating	Non-operating					
	Temperature	0 ~ 55° C (32 ~ 131° F)			-40 ~ 70° C (-40 ~ 158° F)		
	Humidity	5 to 93% @ 40° C (non condensing)			95% @ 40° C (non-condensing)		
	Shock	3G, half-sine 11ms, each axis			18G, half-sine 11ms, each axis		
	Vibration	5 ~ 200 Hz, 0.2G, each axis			5 Hz to 20 Hz @ 1 m2/s3 (0.01 g2/Hz) (flat) 20 Hz to 200 Hz @ -3 dB/oct (slope down) 95% @ 40° C (non-condensing)		
Compliance	Environment	ETSI EN300019-2-1 Class 1.2, EN300019-2-2 Class 2.3, ETSI EN300019-2-3 Class 3.1E					
	PICMG	3.0 R3.0, HPM.1, IRTM.0					
	EMC	CSAC22.2 FCC47 CFR Part15, Class A, CE Mark (EN55022/EN55024/EN300386) Designed to meet GR1089-CORE					

\*Note: Type I FMMs do not include a front panel, other than the FMM-5001B.

## Compatibility

	FMM-5001B	FMM-5001F	FMM-5001Q	FMM-5002	FMM-5004M	FMM-5006
MIC-5332	Yes	Yes	-	Yes	-	Yes
MIC-5333	-	Yes	Yes	Yes	Yes	Yes
RTM-5104	-	Yes	-	Yes	-	Yes

## Ordering Information

Part Number	Description
FMM-5001B	10g Dual-dual star FI support
FMM-5001Q	Quad Intel 82599ES for 40G FI support
FMM-5001F	10Gb Intel 82599ES with dual SFP+ output
FMM-5004M	Mellanox CX3 for 40G FI support
FMM-5002	Server graphic with one external VGA port
FMM-5006	Intel QuickAssist Accelerator

## Related Products

Part Number	Description
MIC-5332 series	ATCA CPU blade with dual Intel Xeon CPU
MIC-5333 series	ATCA CPU blade with dual Intel Xeon CPU
RTM-5104 series	AdvancedTCA RTM for MIC-5332