

# MIC-360

## 6U Compact PCI Blade 13th Gen Intel® Core™ Processor (Code Name: Raptor Lake-P)



### Features

- 13th Generation Intel® Core™ processor, max 14 cores
- Dual channel DDR5 memory up to 64GB, 5200MT/s (max 32GB on board, socket SO-DIMMx1, max 32GB)
- Up to 64GByte DDR5 memory, soldered and SO-DIMM, 5200MT/s
- Diverse storage solution option: PCIe 4.0 x4, M.2 NVME, M.2 SATA and on-board Nand Flash
- Up to 1 x DisplayPort 1.4, 1 x USB Type C with DisplayPort alternate mode enabled, 1 x USB3.2 Gen2, 1 x RJ45 COM, 3 x 2.5GbE, 1 x XMC site
- Reserved on-board 1-Mbit F-RAM, 64MB Nand Flash and 1 x XTM connector

### Introduction

The MIC-360 is engineered for ruggedized and industrial manufacturing equipment applications, offering three configurations to meet a broad range of environmental requirements. This new 6U CompactPCI (CPCI) blade card features a 13th Gen Intel® Core™ processor (formerly known as Raptor Lake-P), delivering up to fourteen cores of computing power with a thermal design power (TDP) under 45 watts. It also includes the advanced Intel® Iris® Xe graphics.

The MIC-360 supports up to 64GB of DDR5 5200 RAM and is equipped with ultra-high-speed I/O interfaces, including PCIe Gen4 (16GT/s) and 2.5Gbase-T. The device features one DisplayPort 1.4 and one USB Type-C with DisplayPort alternate mode, enabling configurations with up to two 4K HDR outputs. Additionally, an extended option with an XTM board is available to support 10GbE, high-definition graphics, and AI computing solutions.

With an operating temperature range of -40 to 55°C and a CompactPCI design, the MIC-360 is a robust and reliable solution for demanding industrial environments.

### Specifications

Processor System	CPU	Intel® Core™ i7-13800HRE, 14C(6P+8E) / 20T, 96EU 24M Intel® Core™ i5-13600HRE 12C(4P+8E)/16T, 80EU 18M Intel® Core™ i3-13300HRE 8C(4P+4E)/12T, 48EU 12M
	TDP	45W
Memory	Technology	DDR5, 5200MT/s, Dual Channel
	Max.Capacity	Up to 64GB (Max 32GB memory down, max 32GB via 1 SODIMM socket)
	ECC Support	IB ECC support
Graphics	Controller	Intel® Iris® Xe Graphics eligible/Intel® UHD Graphics for 13th Gen Intel® processors
	Graphics Max Dynamic Frequency	1.40 GHz/1.30GHz
Display	Interface	1 x DisplayPort on front panel 1 x USB Type C supporting DisplayPort alternate mode 1 x DP to rear J4, 1 x HDMI to rear J5 Supports four independent channels
		Controller
Ethernet	Interface	Up to seven Ethernet in total 3 x RJ45 to front supporting 10M/100M/1000M/2.5Gbps 2 x GbE to rear J5 2 x GbE (PICMIG 2.16) to rear J3
		Storage
Channels	2 x M.2 2242/ 2280 NVME (M key)	
RAID	0, 1	
Mode (Reserved)	SATA-III, request by BOM option	
Channels	1 x 2242/2280 M.2 SATA SSD Onboard 64GB Nand Flash SATA-III	
RTM	Mode (Default) Channels	
Configuration Table Summary	Default	2 x M.2 NVME on front and 2xM.2 SATA on RTM
	Reserved	1 x M.2 NVME, 1 x M.2 SATA, 1 x on board Flash on front board request by BOM option
Front I/O	DP	1 x DP1.4a 4096 x 2304 @60Hz, 36bpp
	USB	1 x USB3.2 Type A Gen2@ 10Gbps 1 x USB Type C@10 Gbps, support DisplayPort alternate mode
	LAN	3 x 10M/100M/1000M/2.5GbE RJ45 Port
	COM	1 x RJ45 COM (Concole) Port, Support RS232/422/485
	Front Panel LEDs	x1 blue for Hot Swap, x1 yellow for HDD, x1 green for Master/Drone mode and x1 green for power
	Button	1 x system reset button

## Specifications (Cont.)

Rear Interface (via J1-J5)	J1/J2	PCI bus, PCI 64bit ,33/66MHz (default)
	J3	2 x 2.5GbE with PICMG2.16 option, 2 x SATA2.0
	J4	2 x USB2.0, 1 x UART, 1 x DP*, 1 x Line in/Line out/Mic in, 8 x GPIO
	J5	2 x 2.5GbE, 4 x USB2.0, 1 x UART, 2 x COM (RS232/422/485), 1 x HDMI*, 1 x PS/2
Others	XMC	1 x XMC connector, PCIe 3.0 x 8 1 x XTM connector request by BOM option
	XTM*	1 x PCIe 3.0 x8 1 x PCIe 3.0 x4
BIOS	Boot Options	NVME, SATA, USB, network (PXE)
Watchdog Timer	Output	Local reset and interrupt
	Interval	Programmable 1s-255s
Security	Trusted Platform Module	TPM2.0 by BOM option
Operating System	Compatibility	Windows10, Windows11, Ubuntu 22.04
Power	Configuration	4HP
	TDP	Maximum:Up to about 82W depending on CPU type, +5V: 11.12A, +3.3V: 5.97A, +12V: 0.45A
Physical	Dimension (W x D)	233.35 x 160.0 mm
Environment	Temperature	Operating (depending on forced airflow) Non-operating -40 ~ 55°C (-40 ~ 131°F) -40 ~ 85°C (-40 ~ 185°F)
	Humidity	95 % @ 40°C, non-condensing 95 % @ 60°C, non-condensing
	Vibration (5-500 Hz)	2Grms Sine, 4.4mm@5-15Hz, 2G@15-500Hz
	Altitude	15000ft, 55°C, above sea level 40000 ft, -40°C above sea level
Regulatory	Conformance	FCC Class A,CE,RoHS
Compliance	Standards	PICMG 2.16 R1.0, PICMG 2.1 R2.0, PICMG 2.0 R3.0

\*1x DP on J4 and 1x HDMI on J5 can be configurable to 2x DP or 2xHDMI by BIOS modify.

\*For XTM extension request,please connect your local sales office.

## Supported CPU Configurations

Intel® CPU Model Number	# of Cores (P+E)*	# of Thread	Cache	Base Frequency	Max Turbo Frequency	Configurable TDP-up/ TDP-down	Memory Types	ECC Support	Industrial Support (-40 ~ 55°C)
Intel® Core™ i7-13800HRE	14 (6+8)	20	24 MB	2.50 GHz	5.00GHz	45W/35W	DDR5-5200	Yes	Yes
Intel® Core™ i5-13600HRE	12 (4+8)	16	18 MB	2.70GHz	4.80GHz	45W/35W	DDR5-5200	Yes	Yes
Intel® Core™ i3-13300HRE	8(4+4)	12	12 MB	2.10GHz	4.60GHz	45W/35W	DDR5-5200	Yes	Yes

\*P: Performance-core, E: Efficient-core

## Ordering Information

Model Number	Front Panel					Main On-board Features						
	DP	USB (Type A)	USB (Type C)*	LAN (RJ45)	COM (RJ45)	CPU	Memory Onboard	SODIMM Socket	Storage M.2 NVME	M.2 SATA	XMC Connector	XTM
MIC-360-A1S1	1	1	1	3	1	Core i7-13800HRE	32GB	1	2	-	1	-
MIC-360-B1S1	1	1	1	3	1	Core i5-13600HRE	32GB	1	2	-	1	-
MIC-360-C1S1	1	1	1	3	1	Core i3-13300HRE	32GB	1	2	-	1	-

\*USB Type C support DP alt mode.

## Related Products

Model number	Configuration
MIC-360-R1S1	RTM module with 4 LAN ports,DVI-D,DP ports
MIC-3666	Dual 10 Gigabit Ethernet XMC
MIC-3667	Quad copper (RJ-45) Gigabit Ethernet XMC
MIC-3042CE	4U CompactPCI® Enclosure w/o CT-Bus, no PSU

## Product Image

