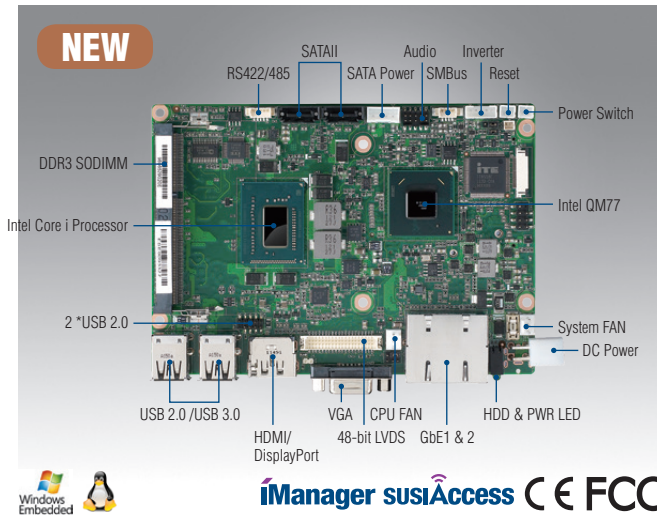


MIO-5290

Intel® Core™ i7 / i3, 3.5" MI/O-Compact SBC, DDR3/DDR3L, VGA, DP/HDMI, 48-bit LVDS, 2GbE, 2 x Mini PCIe, mSATA, iManager, MIOe



Features

- Intel® Core™ i3 and i7 processors + Intel QM77 PCH, 1 x DDR3/DDR3L SO-DIMM support up to 8 GB
- DirectX11, OpenGL3.1, OpenCL1.1, 3 independent display: VGA or LVDS + DisplayPort + DisplayPort (from MIOe)
- Supports Intel AMT8.0, USB 3.0, TPM1.2
- Flexib-le design using integrated multiple I/O: MIOe to approach vertical applications & keep domain knowhow.
- 2 GbE support, HD Audio, Rich I/O interface with 2 COM, 2 SATA, SMBus, 8-bit GPIO, Half-size Mini PCIe, Full-size Mini PCIe & 2 USB 3.0
- Supports iManager, SUSIAccess and Embedded Software APIs

Software APIs:



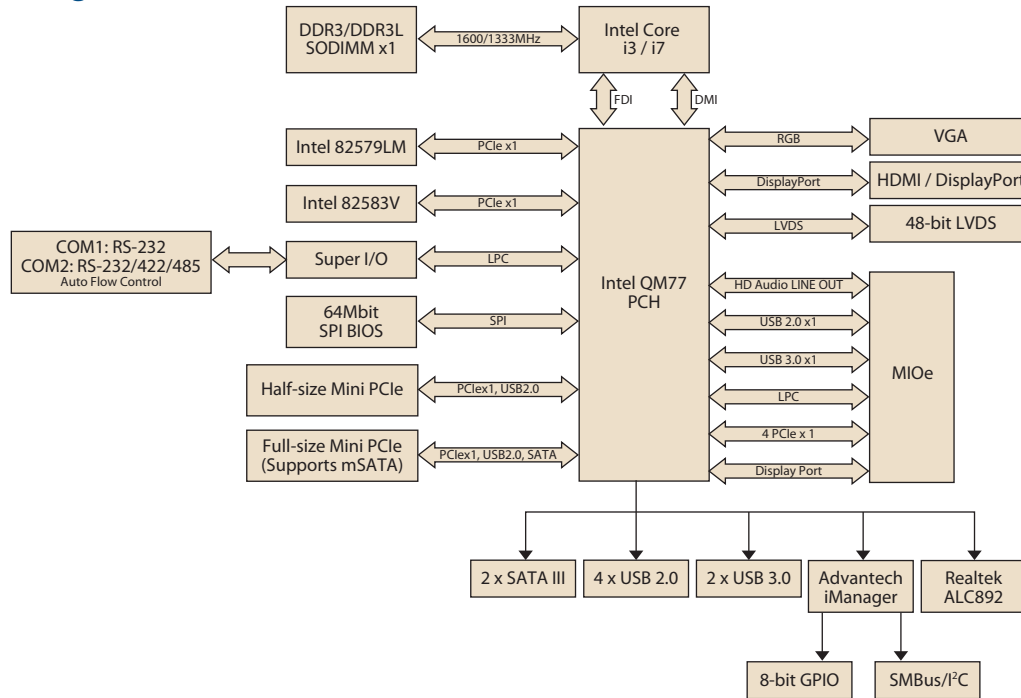
Utilities:



Specifications

Processor System	CPU	ULV Core i3 3217UE	ULV Core i7 3517UE	LV Core i7 3555LE
	Frequency	1.6GHz (Dual Core)	1.7GHz (Dual Core)	2.5GHz (Dual Core)
	L3 Cache	3MB	4MB	4MB
	System Chipset	Intel QM77		
	BIOS	AMI EFI 64Mbit		
Memory	Technology	DDR3 1600MHz, DDR3L 1333 MHz		
	Max. Capacity	8 GB		
	Socket	1 x 204-pin SODIMM		
Display	Controller	Intel QM77 Integrated GFX Gen 7		
	Graphic Engine	DirectX11, OpenGL 3.1, and OpenCL 1.1 Hardware decpde acceleration: AVC/H.264, MPEG-2, VC-1		
	VGA	Integrated 340.4MHz RAMDAC, Max resolution up to 2048 x 1536 @ 75Hz		
	LVDS	LVDS with 3.3V, 5V on LCD VDD power, 5V and 12V support on LVDS inverter Dual channel 24-bit LVDS, max resolution up to 2560 x 1600 @ 60Hz		
	HDMI / DisplayPort	Supports HDMI 1.4 for HD Video playback Max resolution up to 2560 x 1600 @ 60Hz on DisplayPort, Max resolution up to 1920 x 1200 @ 60Hz on HDMI		
Ethernet	3 Independent Display	VGA + Displayport (coastline) + Displayport (MIOe) or LVDS + Displayport (coastline) + DisplayPort (MIOe)		
	Speed	10/100/1000Mbps		
	Controller	GbE1 - Intel 82579LM, GbE2 - Intel 82583V		
Audio	Connector	2 RJ45 on Rear I/O		
	Chipset	Realtek ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in		
WatchDog Timer	Amplifier	Optional via MIOe		
Storage	WatchDog Timer	255 levels timer interval, programmable by software		
	SATA	2 x Serial-ATA port, up to 6.0 Gb/s (600 MB/s)		
Rear I/O	Ethernet	2 (10/100/1000Mbps)		
	VGA	1		
	HDMI / DisplayPort	1		
	USB 2.0	2 x USB 2.0		
	USB 3.0	2 x USB 3.0		
	LED	Power, HDD		
	DC Jack	1 DC Jack connector on MIO-5290U-S6A1E/MIO-5290U-S7A1E		
Internal I/O	USB	2 x USB 2.0		
	Serial	RS-232 from COM1, RS-232/422/485 from COM2 with RS-485 auto flow control (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)		
	I2C	1 (Shares with SMBus pin)		
	SMBus	1 (Shares with I2C pin)		
	GPIO	8-bit general purpose input/output		
Expansion	Mini PCIe	1 x Full-size Mini PCIe (Supports mSATA) 1 x Half-size Mini PCIe		
	MIOe	Displayport, SMBus, 1 x USB2.0, 1 x USB3.0, LPC, 4 x PCIe x1, line out, 5 Vsb/12 Vsb power, Power On Reset		
Power	Power Type	Single 12V DC power input		
	Power Supply Voltage	Supports single 12V input, ± 10%		
	Power Consumption (Typical)	MIO-5290U-S6A1E: w/DDR3:	1.615 A @ 12 V (19.38 W), w/DDR3L: 1.507 A @ 12 V (18.08 W)	
		MIO-5290U-S7A1E: w/DDR3:	2.023 A @ 12 V (24.28 W), w/DDR3L: 1.965 A @ 12 V (23.5 W)	
		MIO-5290L-U5A1E: w/DDR3:	2.356 A @ 12 V (28.27 W), w/DDR3L: 2.309 A @ 12 V (27.7 W)	
	Power Consumption (Max, test in HCT)	MIO-5290U-S6A1E: w/DDR3:	2.024 A @ 12 V (24.29 W), w/DDR3L: 1.84 A @ 12 V (22.08 W)	
MIO-5290U-S7A1E: w/DDR3:		2.412 A @ 12 V (28.94 W), w/DDR3L: 2.3 A @ 12 V (27.6 W)		
MIO-5290L-U5A1E: w/DDR3:		2.896 A @ 12 V (34.75 W), w/DDR3L: 2.708 A @ 12 V (32.5 W)		
Battery	Power Management	ACPI		
	Battery	Lithium 3 V / 210 mAh		
Environment	Operational	0 - 60° C (32 - 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)		
	Non-Operational	-40° C - 85° C and 60° C @ 95% RH Non-Condensing		
Physical Characteristics	Dimensions (L x W)	146 x 102 mm (5.7" x 4"), same as 3.5"		
	Weight	0.84 kg (1.72lb), weight of total package		
	Height	Top Side: 37 mm (MIO-5290U series), 47.7 mm (MIO-5290L series); Bottom Side: 9 mm; PCB: 1.6mm		

Block Diagram



Ordering Information

Part No.	CPU	L3 Cache	LVDS	VGA	HDMI/DP	GbE	HD Audio	RS-232/422/485	RS-232	USB 3.0	USB 2.0	SATAIII	Half-size Mini PCIe	Full-size Mini PCIe ¹	MIOe	Power connector	Thermal Solution ²	Operation Temp.
MIO-5290U-S6A1E	Intel Core i3 ULV 1.6GHz 3217UE DC, 17W	3MB	48-bit	Yes	Yes	2	Yes	1	1	2	4	2	1	1	Yes	DC Jack	Active	0 ~ 60° C
MIO-5290U-S7A1E	Intel Core i7 ULV 1.7GHz 3517UE DC, 17W	4MB	48-bit	Yes	Yes	2	Yes	1	1	2	4	2	1	1	Yes	DC Jack	Active	0 ~ 60° C
MIO-5290L-U5A1E	Intel Core i7 LV 2.5GHz 3555LE DC, 25W	4MB	48-bit	Yes	Yes	2	Yes	1	1	2	4	2	1	1	Yes	2x2 pin	Active	0 ~ 60° C

¹ Full-size Mini PCIe supports mSATA

² Active = with fan

Packing List

Part No.	Description	Quantity
MIO-5290 SBC	MIO-5290 SBC	1
2006529000	Startup Manual	1
1700006291	M Cable SATA 7P/SATA 7P 30cm C=R 180/90	1
1700018785	SATA 35cm power cable	1
1700019435	COM RS-485 D-SUB 9P (M)/1*5P 1.25 25cm cable	1
1701200220	COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM	1
1700019584	Audio Cable 2*5P-2.0/JACK*3 20cm	1
9689000002	mini Jumper pack	1
1960057431N001	Cooler for MIO-5290L series only (Height: 47.7mm)	1
1960057432N001	Cooler for MIO-5290U series only (Height: 37mm)	1

Optional Accessories

Part No.	Description
1960058000N001	Heat spreader for MIO-5290
1700006291	SATA cable 7P/ 7P 30cm C=R 180/90
1703100260	USB5/6 cable
1757003934	Adaptor 100-240V 60W 12V 5A W/O PFC

Embedded OS/API

Embedded OS/API	Part No.	Description
Windows Embedded Standard	2070011449	WES2009 MIO-5290 ENG
Windows Embedded Standard 7	2070011453/ 2070011452	WES7E 32/64bit MIO-5290 ENG/GER/JPN/CH
Linux		Ubuntu 12.04
Software API		iManager 2.0

Rear I/O View



MIO-5290U-S6A1E
MIO-5290U-S7A1E



MIO-5290L-U5A1E