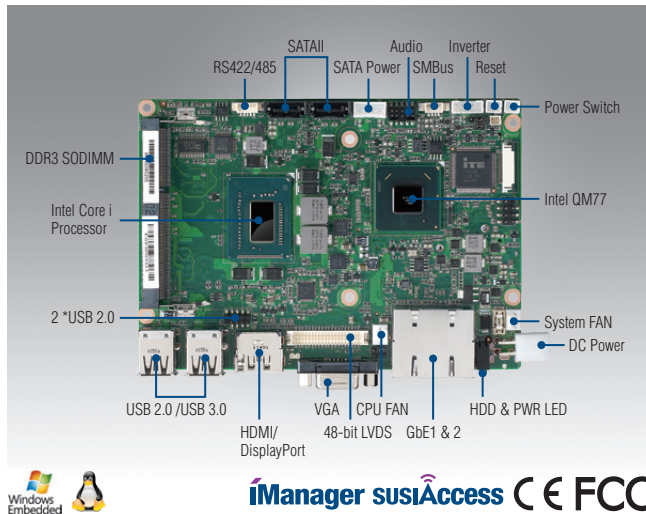


MIO-5290

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™ i7, i3 and Celeron 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
- Flexible 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:

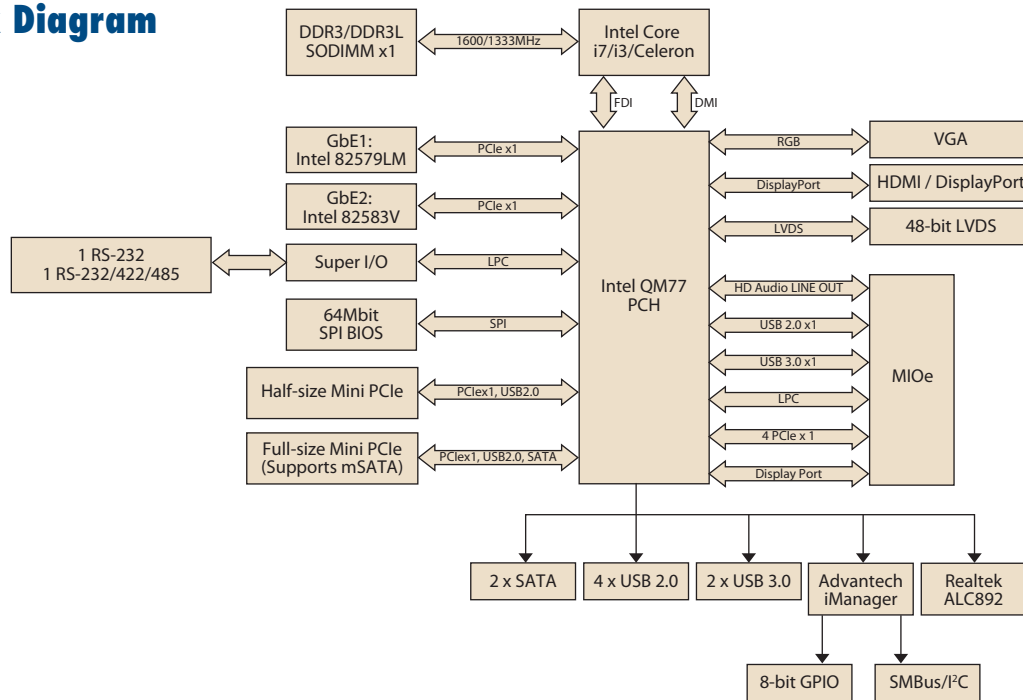


Specifications

Processor System	CPU	Celeron 1047UE	ULV Core i3 3217UE	ULV Core i7 3517UE	LV Core i7 3555LE
	Frequency	1.4GHz (Dual-Core)	1.6GHz (Dual-Core)	1.7GHz (Dual-Core)	2.5GHz (Dual-Core)
Memory	L3 Cache	2MB	3MB	4MB	4MB
	System Chipset	Intel QM77			
Display	BIOS	AMI EFI 64Mbit			
	Technology	DDR3 1600MHz, DDR3L 1333 MHz			
Controller	Max. Capacity	8 GB			
	Socket	1 x 204-pin SODIMM			
Graphic Engine	Controller	Intel HD Graphics 4000 / Intel HD Graphics (Celeron)			
	Graphic Engine	DirectX11, OpenGL 3.1, and OpenCL 1.1			
VGA	Hardware decode acceleration	AVC/H.264, MPEG-2, VC-1			
	Integrated 340.4MHz RAMDAC	Max resolution up to 2048 x 1536 at 75Hz			
LVDS	LVDS with 3.3V, 5V and 12V on LCD VDD power	5V and 12V support on LVDS inverter			
	Dual channel 24-bit LVDS	max resolution up to 2560 x 1600 at 60Hz			
HDMI / DisplayPort*	Supports HDMI 1.4 for HD Video playback				
	Max resolution up to 2560 x 1600 at 60Hz on DisplayPort	Max resolution up to 1920 x 1200 at 60Hz on HDMI			
3 Independent Display	VGA + Displayport (coastline) + Displayport (MIOe) or LVDS + Displayport (coastline) + DisplayPort (MIOe)				
Ethernet	Speed	10/100/1000Mbps			
	Controller	GbE1: Intel 82579LM, GbE2: Intel 82583V			
Audio	Chipset	Realtek ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in			
	Amplifier	Optional via MIOe			
WatchDog Timer	Output System reset	Programmable counter from 1 ~ 255 minutes/ seconds			
Storage	SATA	2, up to 6.0 Gb/s (600 MB/s)			
	mSATA	Supports either mSATA or full size miniPCIe, selected by BIOS, default support miniPCIe			
Rear I/O	Ethernet	2 (10/100/1000Mbps)			
	VGA	1			
HDMI / DisplayPort	HDMI / DisplayPort	1			
	USB 2.0	2 x USB 2.0			
USB 3.0	USB 3.0	2 x USB 3.0			
	LED	Power, HDD			
DC Jack	DC Jack	Only 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 auto flow control (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)			
I2C	I2C	1 (Shares with SMBus pin)			
	SMBus	1			
GPIO	GPIO	8-bit general purpose input/output			
	Mini PCIe	1 x Full-size			
Expansion	MIOe	1 x Half-size			
	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)				
Power Consumption (Max, test in HCT)	MIO-5290L-U5A1E: w/DDR3: 2.356 A @ 12 V (28.27 W), w/DDR3L: 2.309 A @ 12 V (27.7 W)				
	MIO-5290U-S4A1E: w/DDR3: 1.18 A @ 12 V (14.16 W), w/DDR3L: 1.1 A @ 12 V (13.2 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)				
Power Consumption (Max, test in HCT)	MIO-5290L-U5A1E: w/DDR3: 2.896 A @ 12 V (34.75 W), w/DDR3L: 2.708 A @ 12 V (32.5 W)				
	MIO-5290U-S4A1E: w/DDR3: 1.68 A @ 12 V (20.16 W), w/DDR3L: 1.49 A @ 12 V (17.88 W)				
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				

* In order to have optimize compatibility on HDMI, DisplayPort is not under best configuration. If any compatibility issue occur on DP, please help to contact with technical service.

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	SATA	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
MIO-5290U-S4A1E	Intel Celeron 1.40 GHz 1047UE DC, 17W	2MB	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	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	Internal USB 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
VxWorks		6.9.2
QNX		6.5
Linux		CentOS 6.3/Ubuntu 12.04
Software API		iManager 2.0

Rear I/O View



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



MIO-5290L-U5A1E
MIO-5290U-S4A1E