
Datasheet

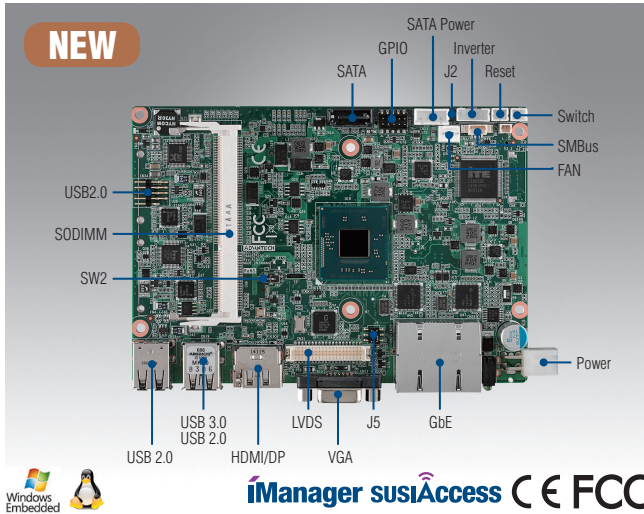
ADVANTECH

MIO-5251

The information contained in this document has been carefully researched and is, to the best of our knowledge, accurate. However, we assume no liability for any product failures or damages, immediate or consequential, resulting from the use of the information provided herein. Our products are not intended for use in systems in which failures of product could result in personal injury. All trademarks mentioned herein are property of their respective owners. All specifications are subject to change without notice.

MIO-5251

Intel® Celeron J1900 & Atom™ E3825/ E3845, 3.5" MI/O-Compact SBC, DDR3L, VGA, HDMI/DP, 48-bit LVDS/eDP, 2GbE, Mini PCIe, mSATA/SD card, iManager, MIOe



iManager susiAccess CE FCC

Features

- Intel® Celeron J1900 & Atom™ E3825/E3845, DDR3L-1066/1333MHz SODIMM up to 8GB
- DirectX11, OpenGL3.2, OpenCL1.2, multi-display: VGA+LVDS/eDP+ HDMI/DP*
- Flexible design using integrated multiple I/O: MIOe to approach vertical applications & keep domain knowhow
- 2 Intel i210 GbE, rich I/O: 4COM, SATA, USB3.0, SMBus/I²C, GPIO full-size Mini PCIe w/ SIM holder, full-size mSATA or SD card
- Supports iManager, SUSIAccess and Embedded Software APIs

Software APIs:



Utilities:

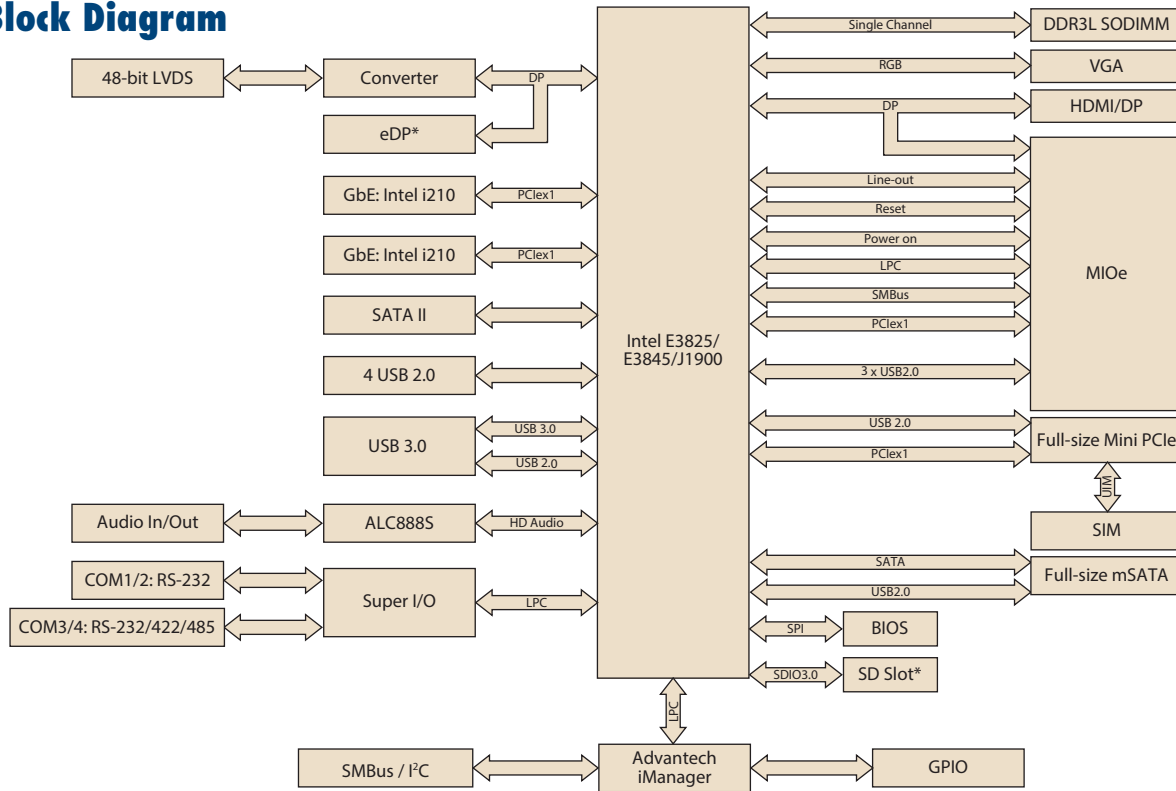


Specifications

		Intel Celeron J1900	Intel Atom E3845	Intel Atom E3825
Processor System	CPU	Intel Celeron J1900	Intel Atom E3845	Intel Atom E3825
	Base Frequency	2 GHz (Quad-Core)	1.91GHz (Quad-Core)	1.33 GHz (Dual-Core)
	Burst Frequency	2.42 GHz	-	-
	L2 Cache	2MB	2MB	1MB
	BIOS	AMI UEFI BIOS at 64 Mb		
Memory	Technology	DDR3L 1333 MHz	DDR3L 1333MHz	DDR3L 1066 MHz
	Max. Capacity	8 GB		
	Socket	1 x 204-pin SODIMM		
Display	Controller	Intel Gen7 graphic engine		
	Graphic Features	DirectX11, OpenGL3.2, OpenCL1.2 HW Decode: H.264, MPEG2, MVC, VC-1, WMV9, MJPEG and VP8. HW Encode: H.264 (MPEG2 and MVC only for J1900)		
	VGA	2560 x 1600 at 60Hz		
	LVDS	48-bit LVDS up to WUXGA 1920 x 1200 at 60Hz Supports 3.3/5/12V for VDD power, 5/12V for inverter		
	eDP*	up to 2560 x 1600 at 60Hz		
	HDMI / DisplayPort*	HDMI 1.4a for HD video playback, 1080P at 60Hz Displayport*, up to 2560 x 1600 at 60Hz		
	Mult-Display	VGA + HDMI/Displayport*, VGA+ LVDS/eDP*, HDMI/Displayport* +LVDS/eDP		
Ethernet	Speed	10/100/1000Mbps		
	Controller	Intel i210		
	Connector	2 RJ45		
Audio	Codec	Realtek ALC888S, 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	1, up to 3Gb/s (300 MB/s)		
	mSATA	1 x Full-size		
	SD slot*	1 (Shared with mSATA), only support on E3825/E3845		
Rear I/O	Ethernet	2 (10/100/1000Mbps)		
	VGA	1		
	HDMI / DisplayPort*	1		
	USB 2.0	3		
	USB 3.0	1		
	LED	Power, HDD		
	DC Jack*	1		
Internal I/O	Serial	2 x RS-232 from COM1/2, 2 x RS-232/422/485 from COM3/4 with auto flow control (ESD protection: air gap ±15kV, contact ±8kV)		
	USB2.0	1		
	I ² C	1 (Shared with SMBus pin)		
	SMBus	1		
	GPIO	8-bit (5V tolerance)		
Expansion	Mini PCIe	1 x Full-size with SIM holder		
	MIOe	SMBus, 3 x USB2.0, LPC, 1 x PCIe x1, line out, DisplayPort*, +5 Vsb/+12 Vsb power, Power On, Rest		
Power	Power Type	Single 12V DC power input		
	Power Supply Voltage	12V ± 10%		
	Power Consumption (Typical)	MIO-5251J-U0A1E:	0.62A @12V (7.44W)	
		MIO-5251EW-S9A1E:	0.51A @12V (6.12W)	
		MIO-5251E-S3A1E:	0.39A @12V (4.68W)	
	Power Consumption (Max, test in HCT)	MIO-5251J-U0A1E:	1.16A @12V (13.92W)	
		MIO-5251EW-S9A1E:	0.92A @12V (11.04W)	
MIO-5251E-S3A1E:		0.78A @12V (9.36W)		
Power Management	ACPI			
Battery	Lithium 3 V / 210 mAh			
Environment	Operating	0 ~ 60 °C (32 ~ 140 °F) (Operating humidity: 40 °C @ 95% RH Non-Condensing)		
	Non-Operating	-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	0.5kg (1.1lb), weight of total package		
	Height	Top Side: 19 mm; Bottom Side: 6.8 mm; PCB: 1.6 mm		

* This specification is supported by request

Block Diagram



*: Supported by request

Ordering Information

Part No.	CPU	L2 Cache	Memory	LVDS	VGA	HDMI/DP	GbE	Audio	RS-232/422/485	RS-232	USB 3.0	USB 2.0	SATAII	Mini PCIe	mSATA	MIOe	Power connector	Thermal Solution*	Operating Temp.
MIO-5251J-U0A1E	Intel J1900 2GHz 10W	2MB	SODIMM	48-bit	Yes	1	2	Yes	2	2	1	4	1	Full-size	Full-size	Yes	2x2pin	Passive	0°C-60°C
MIO-5251E-S3A1E	Intel E3825 1.33GHz 6W	1MB	SODIMM	48-bit	Yes	1	2	Yes	2	2	1	4	1	Full-size	Full-size	Yes	2x2pin	Passive	0°C-60°C
MIO-5251EW-S9A1E	Intel E3845 1.91GHz 10W	2MB	SODIMM	48-bit	Yes	1	2	Yes	2	2	1	4	1	Full-size	Full-size	Yes	2x2pin	Passive (higher)	-40°C-85°C
MIO-5251JZ-2GA1E	Intel J1900 2GHz	2MB	2GB bundled	48-bit	Yes	1	2	Yes	2	2	1	4	1	Full-size	Full-size	Yes	2x2pin	Passive (higher)	-20°C-80°C
MIO-5251JZ2-2GA1E	Intel J1900 2GHz	2MB	2GB bundled	48-bit	Yes	1	2	Yes	2	2	1	4	1	Full-size	Full-size	Yes	2x2pin	Passive (higher)	-40°C-85°C

Note1: J1900 and E3845/E3825 with different version BIOS and only for 64bit Win8/Win7, 32bit supported by T-P/N. (Default setting is Legacy boot)
 Note2: passive=fanless

Packing List

Part No.	Description	Quantity
	MIO-5251 SBC	1
2006525100	Startup Manual	1
1700006291	M Cable SATA 7P/SATA 7P 30cm C=R 180/90	1
1700018785	SATA 35cm power cable	1
1701200220	COM RS-232 Cable 2*10P-2.0/D-SUB 9P (M)*2 22CM	2
1700019584	Audio Cable 2*5P-2.0/JACK*3 20cm	1
9689000002	mini Jumper pack	1
1960062791T001	Heatsink (104 x 83 x 19 mm) for MIO-5251E/J	1
1960066556T001	Wide temp. heatsink (145.4 x 84.2 x 29 mm) for MIO-5251JZ/JZ2/EW	1

Optional Accessories

Part No.	Description
1960065073N001	Heat spreader (16.7mm height)
1757003934	Adapter 100-240V 60W 12V 5A W/O PFC
1703100264	Internal 1 port USB cable 22.5cm

Embedded OS/API

Embedded OS/API	Part No.	Description
WE8S	2070013167	64bit (ENG/T-CH/S-CH/JP)
WE7E	2070013061	64bit (ENG/T-CH/S-CH/JP)
WEC7	TBD	
Linux		Ubuntu 14.04
VxWorks		6.9.3.3
Android		Kit Kat 4.4
Software API		iManager 2.0

Rear I/O View



Our company network supports you worldwide with offices in Germany, Austria, Switzerland, Great Britain and the USA. For more information please contact:

Headquarters

Germany



FORTEC Elektronik AG
Lechwiesenstr. 9
86899 Landsberg am Lech

Phone: +49 8191 91172-0
E-Mail: sales@forteca.de
Internet: www.forteca.de

Fortec Group Members

Austria



FORTEC Elektronik AG
Office Vienna

Nuschinggasse 12
1230 Wien

Phone: +43 1 8673492-0
E-Mail: office@fortec.at
Internet: www.fortec.at

Germany



Distec GmbH

Augsburger Str. 2b
82110 Germering

Phone: +49 89 894363-0
E-Mail: info@distec.de
Internet: www.distec.de

Switzerland



ALTRAC AG

Bahnhofstraße 3
5436 Würenlos

Phone: +41 44 7446111
E-Mail: info@altrac.ch
Internet: www.altrac.ch

United Kingdom



Display Technology Ltd.

5 The Oaks Business Village
Revenge Road, Lordswood
Chatham, Kent, ME5 8LF

Phone: +44 1634 62755
E-Mail: info@displaytechnology.co.uk
Internet: www.displaytechnology.co.uk

USA



Apollo Display Technologies, Corp.

87 Raynor Avenue,
Unit 1 Ronkonkoma,
NY 11779

Phone: +1 631 5804360
E-Mail: info@apolloDisplays.com
Internet: www.apolloDisplays.com