

Data Sheet

FUJITSU Mainboard D3446-S ATX

Industrial Series

Powered by the Intel® C236 Express Chipset supporting DDR4 2133/2400 SDRAM Memory and 6th & 7th generation Intel® Core™ i3 / i5 / i7 and Xeon® E3-1200 V5 and Intel® Xeon® E3-1200 V6 Processors (Socket LGA1151)
Designed for 24/7 continuous operation and enhanced operating temperature range



Chipset:

Intel® C236 Express Chipset

Processors:

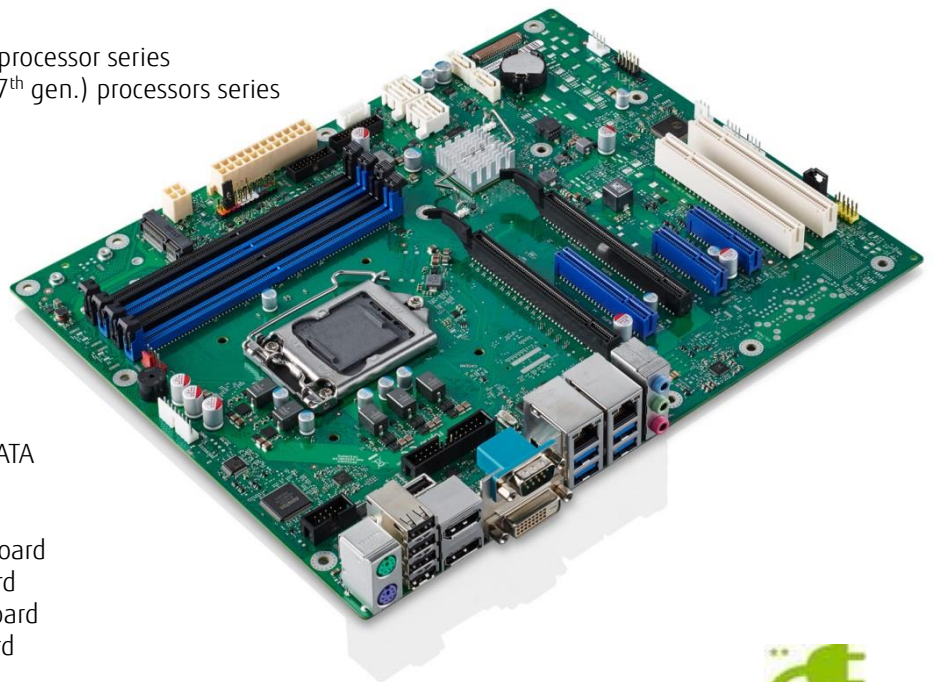
Intel® Xeon® E3-1200 V5 processor series
Intel® Xeon® E3-1200 V6 processor series
Intel® Core™ i7 / i5 / i3 – (6th gen. & 7th gen.) processor series
Intel® Pentium® / Intel® Celeron® (6th gen. & 7th gen.) processors series
Socket LGA1151 – up to 80W TDP

Memory:

DDR4 2133 SDRAM (UDIMM)
DDR4 2400 SDRAM (UDIMM)
ECC / Non-ECC

Product Features:

Intel® iAMT 11.0
Onboard support for Mini-PCI Express and mSATA
Onboard SATA-III incl. RAID support
Intel® HD Graphics; PCI Express Gen3
Multichannel Audio & Dual Intel GbE LAN onboard
USB 2.0/3.0 and USB 2.0 socket (stick) onboard
Trusted Platform Module V2.0 (Infinion) onboard
BIOS-POST/-Boot & OS – HW Watchdog onboard



Features and benefits

Board Size	ATX: 9.6" x 12" (243.8 x 304.8 mm)
Chipset	Intel® C236 Express Chipset
Memory	4 DIMM Sockets DDR4, max. 64GB, Dual Channel, 2133MHz (CL15) / 2400MHz (CL17), UDIMM, 1.2V/2.5V, 288-pin, ECC (appropriate processor required) / non-ECC. Effective memory speed depends on installed processor
Processor	Intel® Xeon® E3-1200 V5 processor series Intel® Xeon® E3-1200 V6 processor series (D3446-S2 only) Intel® Core™ i7 / i5 / i3 – (6th generation) processor series Intel® Core™ i7 / i5 / i3 – (7th generation) processor series (D3446-S2 only) Intel® Pentium® / Intel® Celeron® (6th generation) processor series Intel® Pentium® / Intel® Celeron® (7th generation) processor series (D3446-S2 only) Socket LGA1151, max. 80W TDP
Power Specification	ATX- 24 Pin or ATX- 20 Pin + 4 Pin (12V) Power Connector required Support for Soft-Off Power Supplies 12V and 3.3V Supply Voltage on PCIe Slots 3.3V Auxiliary Supply Voltage on PCIe Slots (Wake-Up Function) On board CPU Voltage Regulator, 5V / 2A Auxiliary Power required for USB Wake-Up from Save-to-RAM, Save-to-Disk
Power Supply Requirements	for onboard components (worst case incl. processor & memory; w/o USB devices; w/o PCIe cards; w/o SATA drives; w/o mSATA / mPCIe;)

Source	Voltage	Min. PS Load	Max.Voltage Tolerance	Mainboard Capacitive Load	Max. Mainboard Current
Main Power Supply	+ 12V	0.05A	± 5 %	5.000µF	10A/15A ¹⁾
	- 12V	0A	± 10 %	470µF	0.3A
	+ 5V	0.2A	± 5 %	3.000µF	6.0A
	+ 3.3V	0A	± 5 %	3.000µF	0.5A
Aux. Power	+ 5Vaux	0A	+5 % / -3%	3.000µF	2.5A

1) Max. Cont. Current = 10A; max. Surge Current = 12A (<100sec) / 15A (<10ms)

BIOS	AMI Aptio 5.x (UEFI) BIOS modified and adapted by Fujitsu Technology Solutions; Recovery BIOS, SM-BIOS (DMI), BIOS and CPU Microcode Update, Quick Boot, Logo Boot, Quiet Boot, Plug & Play, Automatic DRAM and PCIe Configuration, BIOS Support for S.M.A.R.T., Advanced Power Management, ACPI S3/S4, Wake on time from S5. Boot support for M.2 Carrier Board D3352-A1 (PCIe-based SSD modules, AHCI/NVME).BIOS integrated HW Diagnostic Tool
Security Features	Recovery BIOS, System and BIOS Password, Boot Sequence Control, Serial-/ Parallel-/ USB- Port Access, Boot Sector Virus Warning, Write Protection for Flash BIOS, EraseDisk0 (BIOS Feature); TPM V2.0 (Infineon SLB 9665; TCG compliant).

Special Features	Silent Fan	Independent temperature related processor fan and system fan supervision and control	
	System Guard	View and adjust Silent Fan features	
	Silent Drives	Noise reduction for optical and hard disk drives	
	Recovery BIOS	Restores a corrupted BIOS	
	Desk Update	Simple driver update with Driver&Utilities DVD	
	Multi Boot	Comfortable boot from any boot device	
	HDD Password	Access protection for disk drives	
	CSA / UL / FCC certified	cCSAus 60950-1/ FCC-B (planned)	

Operating Systems	OS	"Runnable"	"Tested/Released by Fujitsu"
	MS Windows XP	--	--
	MS Windows 7-32 ¹⁾	X	X
	MS Windows 7-64 ¹⁾	X	X
	MS Windows 8.1-64 ¹⁾	X	X (-S1 only)
	MS Windows 10-64	X	X
	MS Server 2008 R2	X	basic capability approved (-S1 only)
	MS Server 2012 R2	X	basic capability approved (-S1 only)
	MS Server 2016	X	basic capability approved (-S1 only)
	Linux-32	X	
Linux-64	X		

1) Requires Skylake (= 6th gen.) processor!

Further Features

Feature	Mainboard Versions	
	D3446-S1x	D3446-S2x
UDIMM DDR4-2133 / DDR4-2400	x / - ¹⁾	x / x
Intel® Core™ i7-i5-i3 processor series – 6 th gen. / 7 th gen.	x / -	x / x
Intel® Pentium® / Celeron® processor series – 6 th gen. / 7 th gen.	x / -	x / x
Intel® Xeon® processor series E3-12xx V5 / E3-12xx V6	x / -	x / x
Skylake Drivers / Kabylake Drivers (MS Windows)	x / x	- / x

1) DDR4-2400 modules can be used, but they will operate at reduced speed

Designed for Industrial Applications	Longlife components	Designed for 24/7 use in industrial applications
	Tin-plated PCB	Improved durability of PCB surface
	Revision control	Strict control and pre-announcement
	Extended lifecycle	Mainboard available for more than four years
	Industrial grade EMI immunity	
	Enhanced operating temperature range (0°C-60°C) ¹	

Graphics	Intel® HD Graphics (depends on installed processor), DX12
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Audio	Realtek ALC671, 5.1-channel, High Definition Audio Codec
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LAN	Intel i219LM & i210AT with 10/100/1000 MBit/s, iAMT 11 Support, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support
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¹ Forced cooling required, see technical documentation for detailed requirements

Drives	6 x SATA SATA-III; NCQ, AHCI, RAID 0/1/5/10 1 x mSATA (half-/fullsize); SATA-III (shared with one SATA port), incl. USB2.0	
Features D3446-S	Chipset / Board Size	iC236 / ATX
	VGA ² / DVI-I / DVI-D / DP V1.2 / 2 nd DP V1.2 / LVDS	- / - / ✓ / ✓ / ✓ / ✓ / -
	Buzzer / int. Speaker Support / 5.1 Multichannel Audio	✓ / ✓ / ✓
	Dual LAN Gbit / 100 Mbit / 10 Mbit / WoL / LAN Boot	✓ / ✓ / ✓ / ✓ / ✓ / ✓
	iAMT 11.0 / Intel Standard Manageability / DASH V1.1	✓ / ✓ / ✓
	SATA / ATA / RAID / eSATA-Support / mSATA / M.2 SSD ³	✓ / - / ✓ / ✓ / ✓ / ✓ / -
	FireWire™ / USB 2.0 / USB 3.0	- / ✓ / ✓
	FAN monitored & controlled PSU ⁴ / CPU / AUX1 / AUX2 / AUX3	✓ / ✓ / ✓ / ✓ / ✓ / ✓
	TEMP monitored CPU / onboard sensors / external sensor	✓ / ✓ / -
Special Features D3446-S	Silent Fan / Silent Fan LT / System Guard / Silent Drives	✓ / - / ✓ / ✓
	Recovery BIOS / Desk Update / Multi Boot	✓ / ✓ / ✓
	HDD Password / HDD Encryption / EraseDisk / TPM	✓ / - / ✓ / ✓
	BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog	✓ / ✓ / ✓
	Logo Boot Option / Intel On Screen Branding	✓ / ✓
	High Efficiency Core Voltage Regulator Design	✓
	Operating Mode 24-7 / 8-5 (hrs per day - days per week)	✓ / -
	Mainboard operating temperature range (chassis inside)	0°C – 60°C
Internal Connectors D3446-S	DIMM Sockets (DDR4-2133)	4
	PCI Express x16 (16 Lanes, Gen3) / x16 (4 Lanes, Gen3)	1 / 1
	PCI Express x8 (1 Lane Gen3)	1
	PCI Express x4 (4 Lanes, Gen3) / x4 (1 Lane Gen3)	1 / 1
	PCI Slots (32Bit, 33 MHz, Rev. 2.3) / Mini-PCI Express ⁵	2 / 1
	SATA-600 / SATA-300 / mSATA ⁵ / M.2 SSD ³	6 / - / 1 / -
	S/PDIF (digital Audio) OUT / IN	1 / -
	Frontpanel Audio (9-Pin, HD Audio & Legacy Audio AC97)	1
	USB 2.0 channels / USB 3.0 channels / USB Stick (2.0)	2 / 2 / 1
	Serial (COM2, RS232)	1
	FAN PSU ⁴ / CPU / AUX1 / AUX2 ⁶ / AUX3	1 / 1 / 1 / 1 / 1
	Intrusion (Case Open) / GPIO ⁷ (8Bit) / SMBus (Case Temp.)	1 / 1 / -
	Parallel Port Pin Connector ⁷	1
	ATX Power Supply (24 pin + 4 pin) / 12V-only Power Supply	✓ / -
External Connectors D3446-S	VGA Sub D ² / DVI-I / DVI-D / DisplayPort V1.2	- / - / 1 / 2
	Audio Mic. In / Line in / Line out (or driver configuration)	1 / 1 / 1
	LAN (RJ-45)	2
	PS/2 Mouse / Keyboard	1 / 1
	USB 2.0 / USB 3.0	4 / 4
	Serial (COM1, RS232)	1
	Parallel (EPP/ECP) ⁷	-

2 VGA possible via optional converter board D3453 or DP-VGA-converter (dongle)

3 M.2 support possible via D3352 M.2 Carrier Board (for PCIe/AHCI-based SSD module)

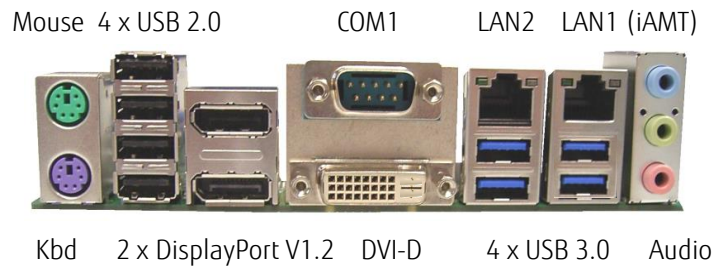
4 Not supported by standard Power Supplies

5 mSATA / Mini-PCI Express = shared socket (halfsize / fullsize support)

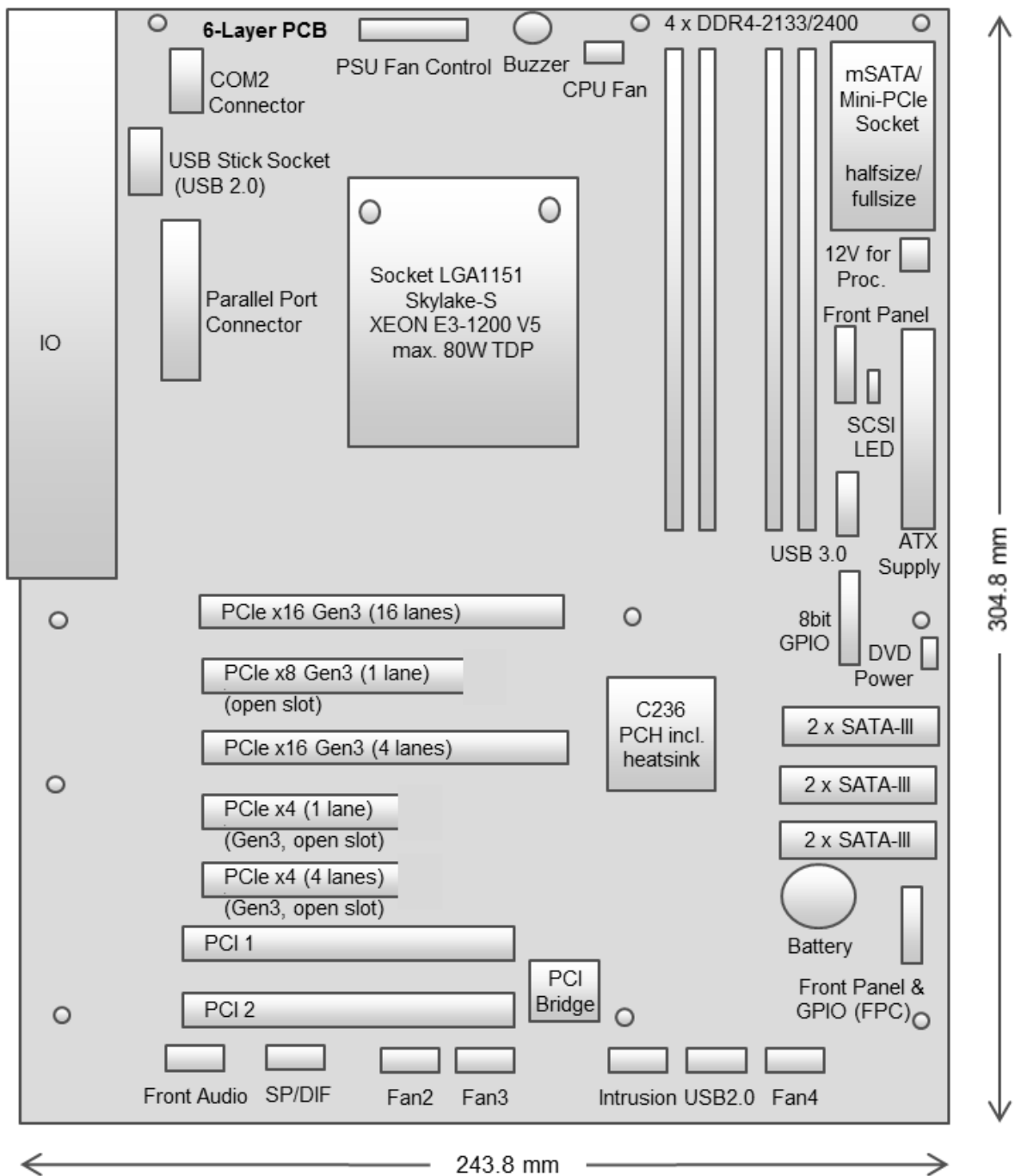
6 One fan useable in PWM- or 3-pin mode (BIOS Option)

7 External parallel port possible via optional connector cable - **Note:** Intel limitation → ECP-DMA-Mode no longer supported

External Connectors



Connector / Socket Diagram



Accessories

Mini PCIe to M.2 Adapter	D3436-S		
Fujitsu VGA Converter Board D3453	D3453-A	S26361-F5000-R8	
Parallel Port Cable ATX / SFF		S26361-F5000-K003 S26361-F5000-K004	
Parallel Port Cable "ATX"		S26361-F5000-K003	
Serial Port Cable "ATX Slotbracket"		S26361-F5000-K005	
Risercard 1x PCIe X4	D3318-A	S26361-F5000-R006	
M.2 Carrier Board	D3352-A2	S26361-F5000-M002	

Further industrial products offered by Fujitsu

- Connectors
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- Relays
- Touch Panels
- Thermal Printers
- Wireless Modules



24 Volt Kiosk Printers



Multi-Input Touch Panels

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