

# Data Sheet

## FUJITSU Mainboard D3445-S ATX

### Industrial Series

Available from  
03/2016



Powered by the Intel® H110 Express Chipset supporting DDR4 2133 SDRAM Memory and 6<sup>th</sup> generation Intel® Core™ i3 / i5 / i7 Processors (Socket LGA1151)  
Designed for 24/7 continuous operation and enhanced operating temperature range

#### Chipset:

Intel® H110 Express Chipset

#### Processors:

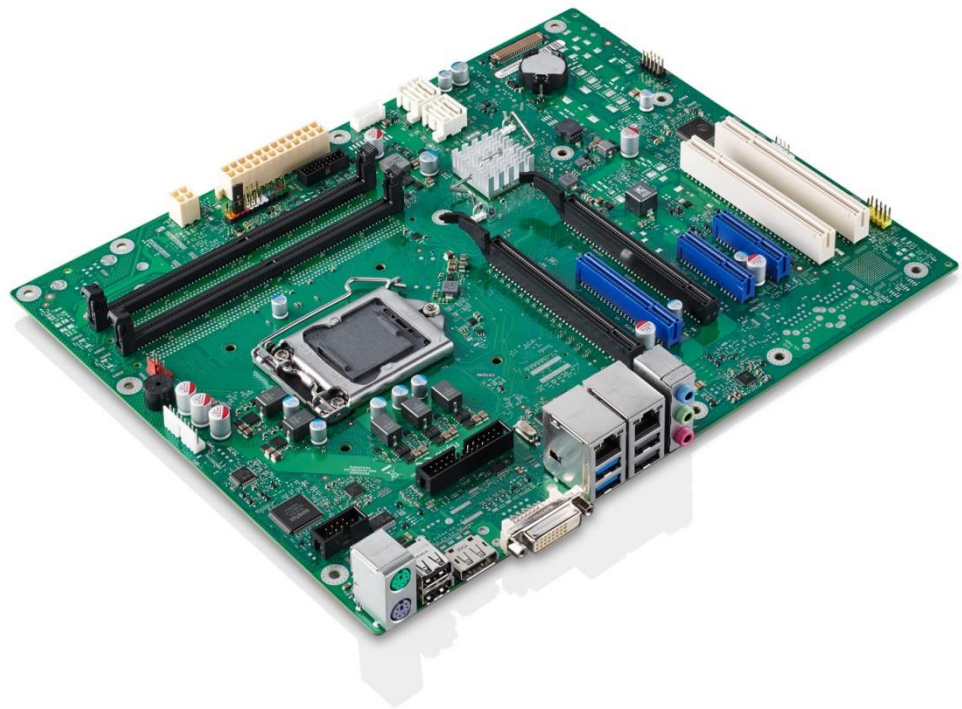
Intel® Core™ i7 / i5 / i3 – (6<sup>th</sup> gen.) processor series  
Intel® Pentium® / Intel® Celeron® processors  
Socket LGA1151 – up to 65W TDP

#### Memory:

DDR4 2133 SDRAM (UDIMM)

#### Product Features:

Intel® HD Graphics; PCI Express Gen3  
Multichannel Audio & Dual Intel GbE LAN onboard  
USB 2.0/3.0 onboard  
Trusted Platform Module V2.0 (Intel) onboard  
BIOS-POST/-Boot & OS – HW Watchdog onboard



# Features and benefits

<b>Board Size</b>	ATX: 9.6" x 12" (243.8 x 304.8 mm)
<b>Chipset</b>	Intel® H110 Express Chipset
<b>Memory</b>	2 DIMM Sockets DDR4, max. 32GB, Dual Channel, 2133MHz (CL15), UDIMM, 1.2V/2.5V, 288-pin, non-ECC. Effective memory speed depends on installed processor

<b>Processor</b>	Intel® Core™ i7 / i5 / i3 – (6th generation) processor series Intel® Pentium® / Celeron® processor series Socket LGA1151, max. 65W TDP
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<b>Power Specification</b>	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
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**Power Supply Requirements**  
for onboard components (worst case incl. processor & memory; w/o USB devices; w/o PCIe cards; w/o SATA drives;)

Source	Voltage	Min. PS Load	Max. Voltage Tolerance	Mainboard Capacitive Load	Max. Mainboard Current
Main Power Supply	+ 12V	0.05A	± 5 %	5.000µF	8A/12A <sup>1)</sup>
	- 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 = 8A; max. Surge Current = 10A (< 100sec) / 12A (< 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.  
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, EraseDisk (BIOS Feature); TPM V2.0 (Intel integrated).

<b>Special Features</b>	
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	cCSAus 60950-1

**Supported / Released Operating Systems**

OS	"Runnable"	"Tested/Released by Fujitsu"
MS Windows XP	--	--
MS Windows 7-32	X	X
MS Windows 7-64	X	X
MS Windows 8.1-64	X	X
MS Windows 10-64	X	X
MS Server 2008 R2	X	--
MS Server 2012 R2	X	--
MS Server 2016	planned	planned
Linux-32	X	
Linux-64	X	

<b>Designed for Industrial Applications</b>	
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) <sup>1)</sup>	

<b>Graphics</b>	Intel® HD Graphics (depends on installed processor), DX12
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<b>Audio</b>	Realtek ALC671, 5.1-channel, High Definition Audio Codec
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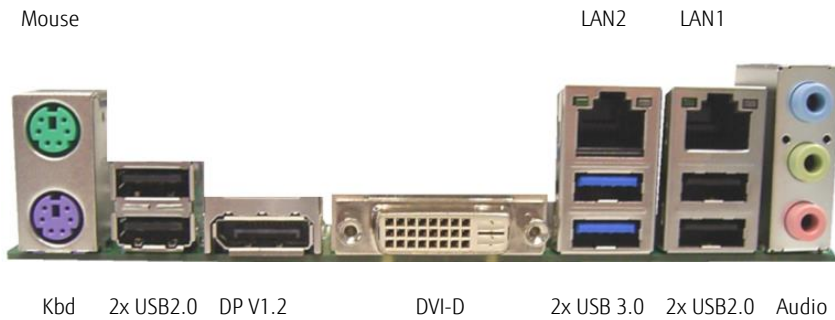
<b>LAN</b>	Intel i219LM & i210AT with 10/100/1000 MBit/s Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support
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<b>Drives</b>	4 x SATA-III, NCQ, AHCI
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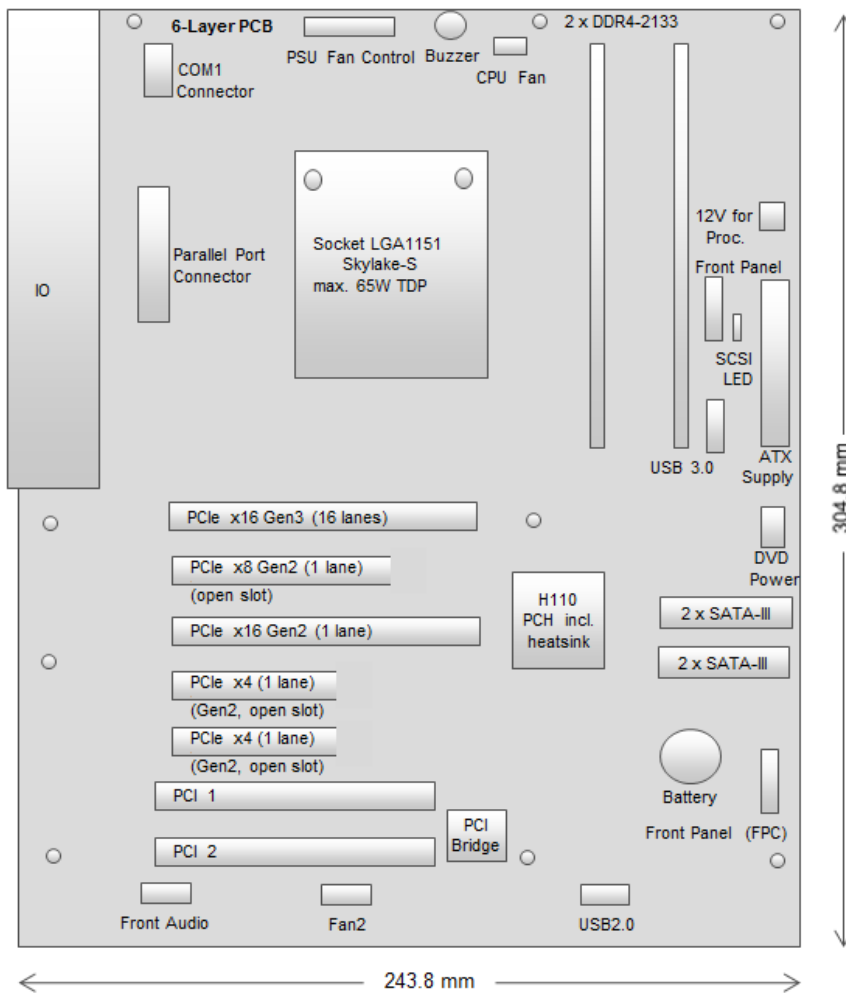
Features	D3445-S
Chipset / Board Size	iH110 / ATX
VGA <sup>2)</sup> / DVI-I / DVI-D / DP V1.2 / 2 <sup>nd</sup> DP V1.2 / LVDS	- / - / ✓ / ✓ / - / -
Buzzer / int. Speaker Support / 5.1 Multichannel Audio	✓ / ✓ / ✓ / ✓
Dual LAN Gbit / 100 Mbit / 10 Mbit / WoL / LAN Boot	✓ / ✓ / ✓ / ✓ / ✓
iAMT 11.0 vPro / Intel Standard Manageability / DASH V1.1	- / - / -
SATA / ATA / RAID / eSATA-Support / mSATA / M.2 SSD	✓ / - / - / ✓ / ✓ / - / -
FireWire™ / USB 2.0 / USB 3.0	- / ✓ / ✓ / ✓
FAN monitored & controlled PSU <sup>3)</sup> / CPU / AUX1 / AUX2 / AUX3	✓ / ✓ / ✓ / ✓ / - / -
TEMP monitored CPU / onboard sensors / external sensor	✓ / ✓ / -
<b>Special Features</b>	
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
<b>Internal Connectors</b>	
DIMM Sockets (DDR4-2133)	2
PCI Express x16 (16 Lanes, Gen3) / x16 (1 Lane, Gen2)	1 / 1
PCI Express x8 (1 Lane Gen2)	1
PCI Express x4 (1 Lane Gen2)	2
PCI Slots (32Bit, 33 MHz, Rev. 2.3) / Mini-PCI Express	2 / -
SATA Express / SATA-600 / SATA-300 / mSATA / M.2 SSD	- / 4 / - / - / -
S/PDIF (digital Audio) OUT / IN	- / -
Frontpanel Audio (9-Pin, HD Audio & Legacy Audio AC97)	1
USB 2.0 channels / USB 3.0 channels / USB Stick (2.0)	2 / 2 / -
Serial (COM2, RS232)	1
FAN PSU <sup>3)</sup> / CPU / AUX1 / AUX2 / Aux3	1 / 1 / 1 / - / -
SMBus (Case Temperature) / Intrusion (Case Open)	- / -
Parallel Port Pin Connector <sup>4)</sup>	1
ATX Power Supply (24 pin + 4 pin) / 12V-only Power Supply	✓ / -
<b>External Connectors</b>	
VGA Sub D <sup>2)</sup> / DVI-I / DVI-D / DisplayPort V1.2	- / - / 1 / 1
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 / 2
Serial (COM1, RS232)	-
Parallel (EPP/ECP) <sup>4)</sup>	-

1) Forced cooling required, see technical documentation for detailed requirements  
 2) VGA possible via optional converter board D3453 or DP-VGA-converter (dongle)  
 3) Not supported by standard Power Supplies  
 4) External parallel port possible via optional connector cable  
 Note: Intel limitation → ECP-DMA-Mode no longer supported

External Connectors



Connector / Socket Diagram



Further industrial products offered by Fujitsu

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



24 Volt Kiosk Printers



Multi-Input Touch Panels

Contact:

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# More information

## Fujitsu products, solutions & services

### Products

[www.fujitsu.com/global/products/](http://www.fujitsu.com/global/products/)  
In addition to the Fujitsu [Product name], Fujitsu offers a full portfolio of other computing products.

### Computing products

- Storage systems: ETERNUS
- Server: PRIMERGY, PRIMEQUEST, Fujitsu SPARC M10, BS2000/OSD Mainframe
- Client Computing Devices: LIFEBOOK, STYLISTIC, ESPRIMO, FUTRO, CELSIUS
- Peripherals: Fujitsu Displays, Accessories
- Software
- Network

Product Support Services with different service levels agreements are recommended to safeguard each product and ensure smooth IT operation.

### Solutions

<http://www.fujitsu.com/global/solutions>  
The Fujitsu solutions combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships. Fujitsu's Solutions include parts of one or more activity groups (e.g., planning, implementation, support, management, and training services) and are designed to solve a specific business need.

**Infrastructure Solutions** are customer offerings created by bringing Fujitsu's best products, services and technologies together with those from partners to deliver benefit to our customers' businesses.

**Industry Solutions** are tailored to meet the needs of specific verticals.

**Business and Technology Solutions** provide a variety of technologies developed to tackle specific business issues such as security and sustainability, across many verticals.

### Services

[www.fujitsu.com/global/services/](http://www.fujitsu.com/global/services/)  
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**Application Services** support the development, integration, testing, deployment and on-going management of both custom developed and packaged applications. The services focus on delivering business and productivity improvements for organizations.

**Business Services** respond to the challenge of planning, delivering and operating IT in a complex and changing IT environment.

**Managed Infrastructure Services** enable customers to deliver the optimal IT environment to meet their needs – achieving high levels of IT service quality and performance for data center and end user environments.

## Fujitsu green policy innovation

[www.fujitsu.com/global/about/environment/](http://www.fujitsu.com/global/about/environment/)  
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