FUJITSU

Data Sheet
FUJITSU Mainboard D3441-S µATX
Industrial Series

Powered by the Intel® Q170 Express Chipset supporting DDR4 2133/2400 SDRAM Memory and 6th & 7th generation Intel® Core™ i3 / i5 / i7 Processors (Socket LGA1151)
Designed for 24/7 continuous operation and enhanced operating temperature range

Chipset:
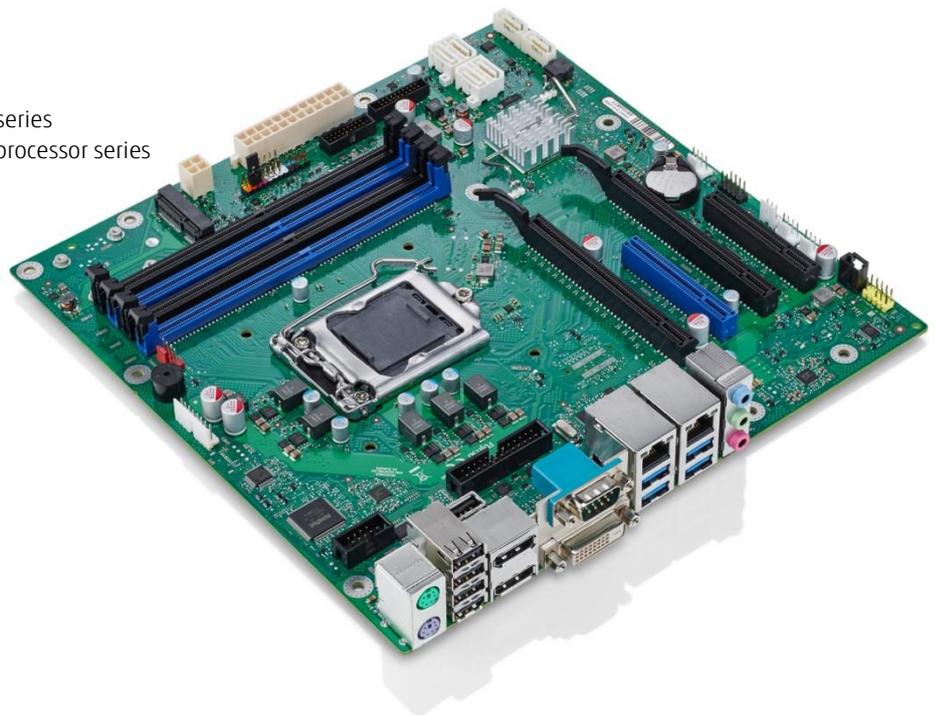Intel® Q170 Express Chipset

Processors:
Intel® Core™ i7 / i5 / i3 – (6th & 7th gen.) processor series
Intel® Pentium® / Celeron® (6th gen. & 7th gen.) processor series

Memory:
DDR4 2133 SDRAM (UDIMM)
DDR4 2400 SDRAM (UDIMM)

Product Features:
Intel® iAMT 11.0 / vPro 2015
Onboard support for Mini-PCI Express and mSATA
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 (Infineon) onboard
HW Watchdog onboard

24/7 OPERATION · SILENT FAN · SYSTEM GUARD · SILENT DRIVES · MULTI BOOT · HDD PASSWORD · RECOVERY BIOS · DESK UPDATE · WATCH DOG · Erasedisk · USB 3.0 · EXTENDED TEMPERATURE

Features and benefits

Board Size	μATX: 9.6″ x 9.6″ (243.8 x 243.8 mm)
Chipset	Intel® Q170 Express Chipset
Memory	4 DIMM Sockets DDR4, max. 64GB, Dual Channel, 2133MHz (CL15) & 2400MHz (CL17), UDIMM, 1.2V/2.5V, 288-pin, non-ECC. Effective memory speed depends on installed processor
Processor	Intel® Core™ i7 / i5 / i3 – (6th generation) processor series Intel® Core™ i7 / i5 / i3 – (7th generation) processor series (D3441-S2 only) Intel® Pentium® / Celeron® (6th generation) processor series Intel® Pentium® / Celeron® (7th generation) processor series (D3441-S2 only) Socket LGA1151, max. 65W 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 / mPICe;)

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 [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 = 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. Boot support for M.2 Carrierboard 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, EraseDisk (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	--
	MS Server 2012 R2	X	--
	MS Server 2016	X	--
	Linux-32	X	--
	Linux-64	X	--

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

Further Features

Features	Mainboard Versions	
	D3441-S1x	D3441-S2x
UDIMM DDR4-2133 / DDR4-2400	x / - [1]	x / x
Intel® Core™ i processor series – 6th gen. / 7th gen.	x / -	x / x
Intel® Pentium® / Celeron® processor series – 6th gen. / 7th gen.	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
	ENIG-plated PCB (tbd)	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

Audio	Realtek ALC671, 5.1-channel, High Definition Audio Codec

LAN	Intel i219LM & i210AT with 10/100/1000 MBit/s, iAMT 11 / vPro Support, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support

Drives	1 x mSATA (half-/fullsize), SATA-III (shared with one SATA port), incl. USB2.0 6 x SATA-III; NCQ, AHCI, RAID 0/1/5/10

---

1 Forced cooling required, see technical documentation for detailed requirements

Features D3441-S	Chipset / Board Size	iQ170 / µATX
	VGA[2] / DVI-I / DVI-D / DP V1.2 / 2nd DP V1.2 / LVDS	- / - / ✔ / ✔ / ✔ / -
	Stereo Audio / 5.1 Multichannel Audio	- / ✔
	Buzzer / int. Speaker Support	✔ / ✔
	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[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 D3441-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 D3441-S	DIMM Sockets (DDR4-2133)	4
	PCI Express x16 (16 Lanes, Gen3) / x16 (4 Lanes, Gen3)	1 / 1
	PCI Express x8 (4 Lanes, Gen3) / x8 (1 Lane Gen3)	1 / 1
	PCI Slots (32Bit, 33 MHz, Rev. 2.3) / Mini-PCI Express[5]	- / 1
	SATA-600 / SATA-300 / mSATA[5] / M.2 SSD	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 (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 D3441-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 modules)
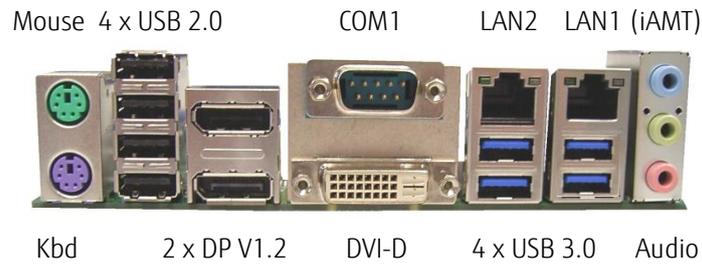
4 Not supported by standard Power Supplies

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

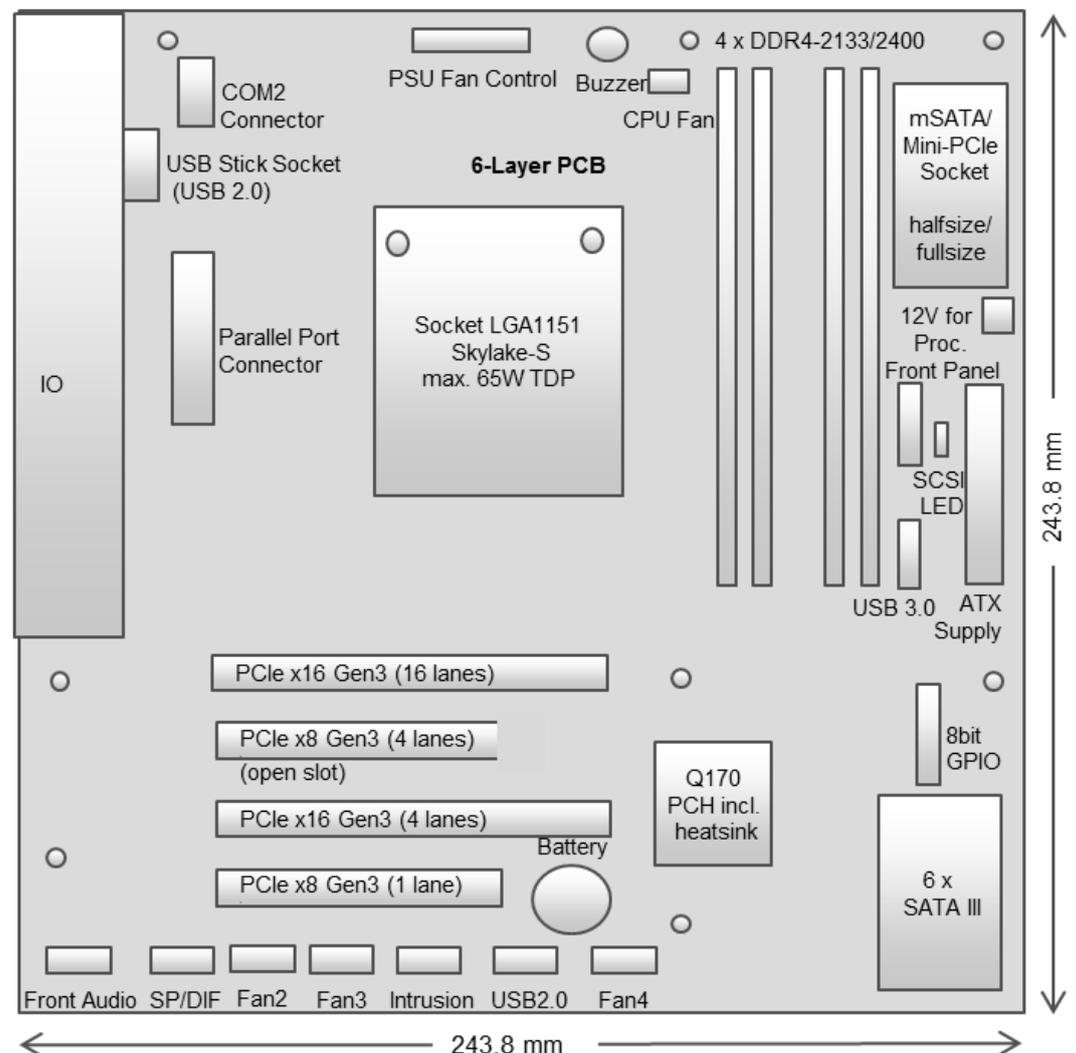6 One fan useable in PWM- or 3-pin mode (BIOS Option)

7 External parallel port possible via optional connector cable

Note: Intel limitation → ECP-DMA-Mode no longer supported

External Connectors

Mouse 4 x USB 2.0   COM1   LAN2   LAN1 (iAMT)

Kbd   2 x DP V1.2   DVI-D   4 x USB 3.0   Audio

Connector / Socket Diagram

COM2 Connector

PSU Fan Control   Buzzer

4 x DDR4-2133/2400

CPU Fan

mSATA/ Mini-PCle Socket

halfsize/ fullsize

USB Stick Socket (USB 2.0)

6-Layer PCB

Parallel Port Connector

Socket LGA1151 Skylake-S max. 65W TDP

12V for Proc.

Front Panel

IO

SCSI LED

USB 3.0   ATX Supply

243.8 mm

PCle x16 Gen3 (16 lanes)

8bit GPIO

PCle x8 Gen3 (4 lanes) (open slot)

PCle x16 Gen3 (4 lanes)

Q170 PCH incl. heatsink

PCle x8 Gen3 (1 lane)

Battery

6 x SATA III

Front Audio   SP/DIF   Fan2   Fan3   Intrusion   USB2.0   Fan4

243.8 mm

Accessories

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

24 Volt Kiosk Printers　　*Multi-Input Touch Panels*

Contact:

Fujitsu Components Europe, B.V.
Tel.: +31 (0)23 556 0910
Fax: +31 (0)23 556 0950
Website: emea.fujitsu.com/components
Address: Diamantlaan 25
2132 WV Hoofddorp
Netherlands

More information

Fujitsu products, solutions & services

Products
www.fujitsu.com/global/products/
In addition to the Fujitsu mainboards, 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/
Several customizable Fujitsu Service offerings ensure that IT makes a real difference and delivers true business value. We do this by leveraging our extensive experience in managing large, complex, transformational IT programs to help clients in planning, delivering and operating IT services in a challenging and changing business environment.

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/
Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:

More information
Learn more about Fujitsu, please contact your Fujitsu sales representative, Fujitsu business partner,
or visit our website.
www.fujitsu.com/fts/mainboards/