

# Data Sheet

## Fujitsu Mainboard D3231-S $\mu$ ATX

### Industrial Series

Available from  
Q4/2013



Powered by the Intel® Q87 Express Chipset supporting DDR3 1600 SDRAM Memory and 4<sup>th</sup> generation Intel® Core™ i3 / i5 / i7 Processors (Socket LGA1150)  
Designed & approved for enhanced operating temperature range from 0°C to 60°C  
Designed & approved for 24/7 continuous operation

#### Chipset:

Intel® Q87 Express Chipset

#### Processors:

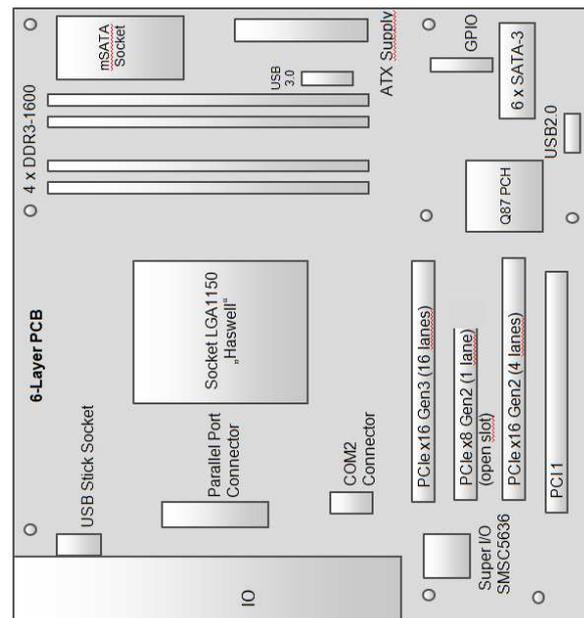
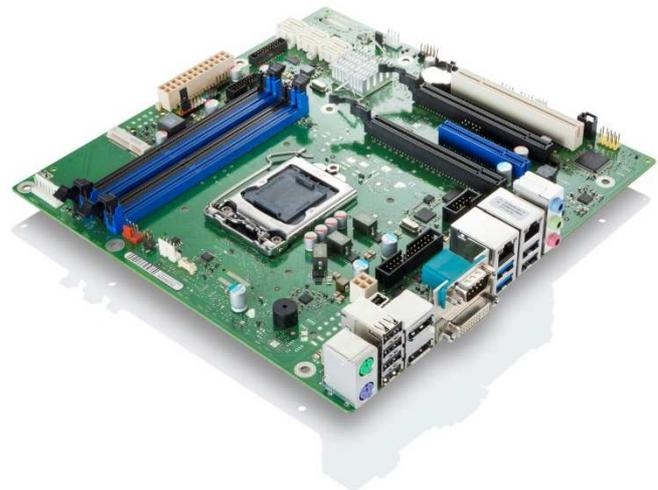
- Intel® Core™ i7 – 4xxx processor series
- Intel® Core™ i5 – 4xxx processor series
- Intel® Core™ i3 – future gen4 processor series
- Intel® Pentium® – future *Haswell* processor series
- Intel® Celeron® – future *Haswell* processor series

#### Memory:

DDR3 1333/1600 SDRAM

#### Product Features:

- Intel® VPro 2013 = Intel® iAMT 9 (CPU support required)
- Intel® HD Graphics (integrated in processor, e.g. HD4600)
- PCI Express Gen3
- 8 Bit GPIO & multichannel Audio onboard
- USB 2.0 / 3.0 and USB socket (stick/dongle) onboard
- 2 x Intel GbE LAN onboard (incl. teaming support)
- Infinion TPM V1.2 onboard
- BIOS-POST/-Boot & OS – HW Watchdog onboard



# Features and benefits

**Board Size** µATX: 9.6" x 9.6" (243.8 x 243.8 mm)

**Chipset** Intel® Q87 Express Chipset

**Memory**

4 DIMM Sockets (1.5V), 1GB - 32GB, Single Channel / Dual Channel DDR3-1333 (CL9) and DDR3-1600 (CL11) SDRAM, unbuffered, no ECC

**Processor**

Intel® Core™ i5 / i7 – 4xxx processor series  
 Intel® Core™ i3 – future gen4 processor series  
 Intel® Pentium® - future Haswell processor series  
 Intel® Celeron® - future Haswell processor series  
 Socket LGA1150, max. 95W TDP  
 (For details on supported processors please refer to our website)

**Power Specification**

ATX- 24 Pin or ATX- 20 Pin Power Supply required; Support for Soft-Off Power Supplies; 3.3V Auxiliary Supply Voltage on PCIe Slots (Wake-Up Function)  
 On board CPU Core Voltage Regulator

**Power Supply Requirements**

for onboard components (worst case incl. processor, memory, 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 %	10.000µF	14A/18A <sup>1)</sup>
	- 12V	0A	± 10 %	500µF	0.3A
	+ 5V	0.2A	± 5 %	10.000µF	10A
	+ 3.3V	0A	± 5 %	6.000µF	2A
Aux. Power	+ 5Vaux	0A	+5 % / -3%	7.000µF	2.5A

1) 18A = Surge Current for 20 sec!

**BIOS**

AMI Aptio 4.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 PCI 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

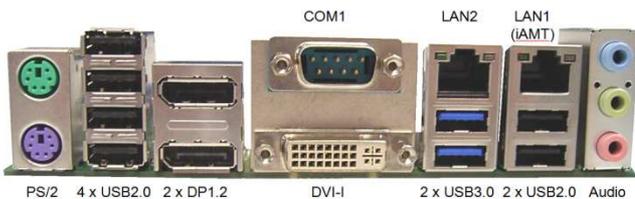
**Security Features**

Recovery BIOS, System and BIOS Password, Boot Sequence Control, Serial-/ Parallel-/ USB- Port Access Protection, Boot Sector Virus Warning, Write Protection for Flash BIOS, EraseDisk (BIOS Feature), Infineon TPM V1.2.

**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

**External Connectors**



**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) <sup>4)</sup>	

**Graphics**

Intel® HD Graphics (e.g. HD4600, depends on installed processor), DX11.1

**Audio**

Realtek ALC671, 5.1-channel, High Definition Audio Codec

**LAN**

Intel i217LM / Intel i210AT Ethernet Controller with 10/100/1000 Mbit/s, iAMT, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support

**Drives**

6 Serial ATA III 600 Interface (up to 6Gbit/s), NCQ, AHCI, RAID 0/1/5/10  
 1 mSATA (fullsize), ATA III 600 (shared with one SATA port) ), incl. USB2.0

**Features**

Features	D3231-S
Chipset	iQ87
Board Size	µATX
VGA / DVI-I / DVI-D / DisplayPort V1.2 / LVDS	- <sup>3)</sup> / ✓ / - / ✓ / ✓ / -
Stereo Audio / 5.1 Multichannel Audio	- / ✓
Buzzer / int. Speaker Support	✓ / ✓
Dual LAN Gbit / 100 Mbit / 10 Mbit	✓ / ✓ / ✓
LAN ASF / DASH / WoL / Boot / VPro 2013 (iAMT 9)	- / - / ✓ / ✓ / ✓ / ✓
SATA / ATA / RAID / eSATA-support / mSATA	✓ / - / ✓ / ✓ / ✓ / ✓
FireWire™ / USB 2.0 / USB 3.0	- / ✓ / ✓ / ✓
FAN monitored PSU <sup>1)</sup> / CPU / AUX1 / AUX2 / AUX3 <sup>1)</sup>	✓ / ✓ / ✓ / ✓ / ✓ / ✓
FAN controlled PSU <sup>1)</sup> / CPU / AUX1 / AUX2 / AUX3 <sup>1)</sup>	✓ / ✓ / ✓ / ✓ / ✓ / ✓
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	✓ / - / ✓ / ✓ / ✓
Logo Boot Option / Intel On Screen Branding	✓ / ✓
High Efficiency Core Voltage Regulator Design	✓
BIOS POST- / BIOS Boot- / OS- HW Watchdog	✓ / ✓ / ✓ / ✓
Operating Mode 24-7 / 8-5 (hrs per day - days per week)	✓ / -
Mainboard operating temperature range (chassis inside)	0°C - 60°C

**Internal Connectors**

DIMM Sockets (DDR3 1600)	4
PCI Express x16 Slot (Gen3)	1
PCI Express x16 Slot (4 Lanes, Gen2) / x8 Slot (1 Lane, Gen2)	1 / 1
PCI Slots (32Bit, 33 MHz, Rev. 2.3)	1
SATA-600 / SATA-300 / ATA / Floppy / mSATA	6 / 0 / 0 / 0 / 1
S/PDIF (digital Audio) OUT / IN	- / 1
Frontpanel Audio (9-Pin, HD Audio)	1
USB 2.0 channels / USB 3.0 channels / USB Stick (2.0)	2 / 2 / 1
Serial (FIFO, 16550 compatible)	1
FAN PSU <sup>1)</sup> / CPU / AUX1 / AUX2 / AUX3 <sup>1)</sup>	1 / 1 / 1 / 1 / 1
SMBus (Case Temperature)	-
Intrusion (Case Open) / GPIO (8Bit)	1 / 1
Parallel (EPP/ECP) Pin Connector <sup>2)</sup>	1
Power 24 pin (BTX) / 4 pin (12V processor supply)	1 / 1

**External Connectors**

VGA Sub D <sup>3)</sup> / DVI-I / DVI-D / DisplayPort V1.2	- / 1 / - / 2
Audio Mic. In / Line in / Line out (or driver configuration)	1 / 1 / 1
S/PDIF (digital Audio) OUT / IN	- / -
LAN (RJ-45)	2
PS/2 Mouse / Keyboard	1 / 1
USB 2.0 / USB 3.0	6 / 2
Serial (RS232, FIFO, 16550 compatible)	1
Parallel (EPP/ECP) <sup>2)</sup>	-

- 1) Not supported by standard Power Supplies; FAN PSU and FAN AUX3 cannot be used simultaneously (Selectable in BIOS Setup)
- 2) External parallel port possible via optional connector cable
- 3) Via optional DVI-I / VGA interface connector
- 4) Forced cooling required, see technical documentation for detailed requirements

# More information

## Fujitsu platform solutions

In addition to Fujitsu Mainboards Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

### Dynamic Infrastructures

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure-as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

### Computing products

[www.fujitsu.com/global/services/computing](http://www.fujitsu.com/global/services/computing)

- PRIMERGY: Industrial standard server
- SPARC Enterprise: UNIX server
- PRIMEQUEST: Mission-critical IA server
- ETERNUS: Storage system

### Software

[www.fujitsu.com/software/](http://www.fujitsu.com/software/)

- Interstage: Application infrastructure software
- Systemwalker: System management software

## More information

Learn more about Fujitsu Mainboards, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.  
<http://ts.fujitsu.com/>

## Fujitsu green policy innovation

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



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