

# Data Sheet Fujitsu Mainboard D3221-A µATX

# Classic Desktop Series

Powered by the Intel® Q85 Express Chipset supporting DDR3 1600 SDRAM Memory and  $4^{th}$  generation Intel® Core TM i3 / i5 / i7 Processors (Socket LGA1150)

#### Designed for 24/7 continuous operation

#### Chipset:

Intel® Q85 Express Chipset

#### **Processors:**

Intel® Core™ i7 / i5 / i3 – 4xxx processor series Intel® "TE" Haswell-based embedded series Intel® Pentium® - G3xxx processor series Intel® Celeron® - G18xx processor series Ready for "Haswell Refresh" processor series

#### Memory:

DDR3 1333/1600 SDRAM

#### **Product Features:**

Intel® iAMT (Standard Manageability) Intel® HD Graphics (e.g. HD4600) PCI Express Gen3 Multichannel Audio & Intel GbE LAN onboard USB 2.0 and USB 3.0 onboard Trusted Platform Modul V1.2 (Infineon) onboard Second Display Port optional Specific 12V-only Powersupply required

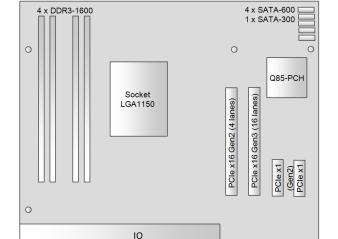
























(Picture similar to product; ATX PSU not possible!)



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## Features and benefits

**Board Size** reduced µATX: 9.6" x 8.4" (243.8 x 213.4 mm)

Chipset Intel® Q85 Express Chipset

#### Memory

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

#### Processor

Intel® Core™ i7 / i5 / i3 – 4xxx processor series Intel® "TE" Haswell-based embedded processor series

Intel® Pentium® - G3xxx processor series Intel® Celeron® - G18xx processor series

Socket LGA1150, max. 95W TDP

(For details on supported processors please refer to our website)

#### Power Specification

Fujitsu 12V only concept adopted 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)

Source	Voltage	Min. PS Load	Max.Voltage Tolerance	Cont./ Peak Mainboard Current
Main Power Supply	+ 12 V <sub>Rail1</sub>	0.1 A	± 5 %	15 A / 18 A
Main Power Supply	+ 12 V <sub>Rail2</sub>	0.1 A	± 5 %	15 A / 18 A
Aux. Power Supply	+ 11 V <sub>aux</sub>	0 A	10.2 V-11.8 V	1 A

<sup>1) 18</sup>A = 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 PCIe Configuration, BIOS Support for S.M.A.R.T., Advanced Power Management, ACPI S3/S4, Wake on time from S5

#### 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), Trusted Platform Module.

#### Special Features

Silent Fan LT Independent temperature related processor fan and

system fan supervision

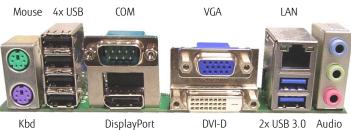
System Guard View Silent Fan LT features

Silent Drives Noise reduction for optical and hard disk drives

Recovery BIOS Restores a corrupted BIOS

Desk Update
Multi Boot
HDD Password
Simple driver update with Driver&Utilities DVD
Comfortable boot from any boot device
Access protection for disk drives

#### **External Connectors**



Designed for 24 / 7 use

Longlife components for 24 / 7 continuous operation

#### Graphics

Intel® HD Graphics 4600 (depends on installed processor), DX11.1

#### Audio

Realtek ALC671, 5.1-channel, High Definition Audio Codec

#### LAN

Intel Clarkville I217V with 10/100/1000 MBit/s, iAMT Manageability, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display

#### Drives

4 Serial ATA III 600 Interface (up to 6GBit/s), 1 Serial ATA II 300 Interface NCQ, AHCI

Features         D3221-A           Chipset         i085           Board Size         reduced μATX           Stereo Audio / 5.1 Multichannel Audio         - / √           Buzzer / int. Speaker Support         - / √           LAN Gbit / 100 Mbit / 10 Mbit         ✓ / √ / √           LAN ASF / DASH V1.0 / WoL / Boot / iAMT Standard         - / √ / √ / √           SATA / ATA / RAID / eSATA-support         ✓ / - / - / √           FAN monitored PSU <sup>10</sup> / CPU / AUX1 / AUX2         - / √ / √           FAN controlled PSU <sup>10</sup> / CPU / AUX1 / AUX2         - / √ / √           FAN controlled PSU <sup>10</sup> / CPU / MUX1 / AUX2         - / √ / √           FAN controlled PSU <sup>10</sup> / CPU / AUX1 / AUX2         - / √ / √           Special Features         Silent Fan / Silent Fan LT / System Guard / Silent Drives         ✓ / / √           Silent Fan / Silent Fan LT / System Guard / Silent Drives         ✓ / / / √           Recovery BIOS / Desk Update / Multi Boot         ✓ / / / √           HDD Password / HDD Encryption / EraseDisk / TPM         ✓ / - / / √           BIOS POST Watchdog / Blos 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)		
Board Size  Stereo Audio / 5.1 Multichannel Audio  -/ ✓  Buzzer / Int. Speaker Support  LAN Gbir / 100 Mbir / 100 Mbit  LAN ASF / DASH V1.0 / WoL / Boot / iAMT Standard  -/ ✓ / ✓ / ✓ / ✓ / ✓ / ✓ / ✓ / ✓ / ✓ / ✓	Features	D3221-A
Stereo Audio / 5.1 Multichannel Audio   -/ ✓		
Buzzer / int. Speaker Support  LAN Gbit / 100 Mbit / 10 Mbit  V / V / V  LAN ASF / DASH V1.0 / WoL / Boot / iAMT Standard  - / V / V / V / V  SATA / ATA / RAID / eSATA-support  FireWire™ / USB 2.0 / USB 3.0  - / V / V  FAN monitored PSU ¹¹ / CPU / AUX1 / AUX2  - / V / V / -  FAN controlled PSU ¹¹ / CPU / AUX1 / AUX2  - / V / V / -  FEMP monitored CPU / ONB / OFFB  Special Features  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  V / V  High Efficiency Core Voltage Regulator Design  Operating Mode 24-77 8-5 (hrs per day - days per week)  Mainboard operating temperature range (chassis inside)  Internal Connectors  DIMM Sockets (DDR3-1600)  PCI Express x16 Slot (4en3)  PCI Express x16 Slot (4en3)  PCI Express x16 Slot (4en3)  PCI Stots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4 / 1 / 0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, Hol Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  4 / 2  Serial (FIFO, 16550 compatible)  FAN PSU ¹¹ / CPU / AUX1 / AUX2  - / 1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  S/PDIF (digital Audio, cinch) OUT / IN  S/PDIF (digital Audio, cinch) OUT / IN  Parallel (EPP/ECP) Pin Connector <sup>2)</sup> AIX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  - / ×  External Connectors  S/PDIF (digital Audio, optical) OUT  - LAN (R)-45)  1 / 1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  S/PDIF (digital Audio, cinch) OUT / IN  S/PDIF (digital Audio, cinch) OUT / IN  S/PDIF (digital Audio, cinch) OUT / IN  S/PDIF (digital Audio, cin		
LAN Gbit / 100 Mbit / 10 Mbit  LAN ASF / DASH V1.0 / WoL / Boot / iAMT Standard  - / V / V / V  LAN ASF / DASH V1.0 / WoL / Boot / iAMT Standard  - / V / V / V  SATA / ATA / RAID / eSATA-support  FireWire™ / USB 2.0 / USB 3.0  - / V / V /  FAN monitored PSU ** / (PU / AUX1 / AUX2  FAN controlled PSU ** / (PU / AUX1 / AUX2  - / V / V /  FAN controlled PSU ** / (PU / AUX1 / AUX2  TEMP monitored CPU / ONB / OFFB  Special Features  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  V / V  High Efficiency Core Voltage Regulator Design  Operating Mode 24-77.8-5 (hrs per day - days per week)  Mainboard operating temperature range (chassis inside)  DIMM Sockets (DDR3-1600)  A CL Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4 / 11 / 0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  TireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  Serial (FIFO, 16550 compatible)  FAN PSU ** / (PP) / AUX1 / AUX2  SMBus (Case Temperature)  - AUX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort 31  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort 31  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  Fixe Intrusion (Case Open)  1 1  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  Fixe External Connectors  VGA Sub D / DVI-D / DisplayPort 31  ATX Power Supply (6-Pin, IEEE 1394)  - V SEXEMBLE (6-Pin, IEEE 1394)  - SP2/2 Mouse / Keyboard  1 / 1  LAN (R)-45)  PS/2 Mouse / Keyboard  1 / 1  LAN (R)-45)  PS/2 Mouse / Keyboard  1 / 1  Serial (R5232, FIFO, 16550 compatible)		
LAN ASF / DASH V1.0 / WoL / Boot / iAMT Standard  -		
SATA / ATA / RAID / eSATA-support  FireWire™ / USB 2.0 / USB 3.0  FAN monitored PSU ¹¹ / CPU / AUX1 / AUX2  FAN controlled PSU ¹¹ / CPU / AUX1 / AUX2  TEMP monitored CPU / ONB / OFFB  Silent Fan / Silent Fan LT / System Guard / Silent Drives  Silent Fan / Silent Fan LT / Silent Fa		<b>√</b>   <b>√</b>   <b>√</b>
FireWire™ / USB 2.0 / USB 3.0  FAN monitored PSU ¹¹ / CPU / AUX1 / AUX2  FAN controlled PSU ¹¹ / CPU / AUX1 / AUX2  FAN controlled PSU ¹¹ / CPU / AUX1 / AUX2  FAN controlled PSU ¹¹ / CPU / AUX1 / AUX2  FEMP monitored CPU / ONB / OFFB  Special Features  Silent Fan / Silent Fan LT / System Guard / Silent Drives  Fecovery 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  Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ### High Efficiency Core Voltage Regulator Design  Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ### Mainboard operating temperature range (chassis inside)  ### Internal Connectors  DIMM Sockets (DDR3-1600)  ### PCI Express x16 Slot (Gen3)  ### PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  ### PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  ### PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  ### PCI Express x16 Slot (9-Pin, HD Audio)  ### Frontpanel Audio (9-Pin, HD Audio)  ### PCI Express Policy (1 Subannels)  ### PCI E		
FAN monitored PSU 17 (PU / AUX1 / AUX2 - / ✓ / ✓ / FAN controlled PSU 17 (PU / AUX1 / AUX2 - / ✓ / ✓ / ✓ FAN controlled PSU 17 (PU / AUX1 / AUX2 - / ✓ / ✓ / ✓ FEMP monitored CPU / ONB / OFFB		<b>√</b>   -   -   <b>√</b>
FAN controlled PSU 11 / CPU / AUX1 / AUX2		
TEMP monitored CPU / ONB / OFFB  Special Features  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)  ### Internal Connectors  DIMM Sockets (DDR3-1600)  ### PCI Express x16 Slot (Gen3)  ### PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  ### PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  ### PCI Express x16 Slot (9-Pin, HD Audio)  ### Frontpanel Audio (9-Pin, HD Audio)  ### PCI Express Temperature  ### USB 2.0 channels / USB 3.0 channels  ### PCI Express Temperature  ### P	FAN monitored PSU 1) / CPU / AUX1 / AUX2	-   🗸   🗸   -
Special Features  Silent Fan / Silent Fan LT / System Guard / Silent Drives  Recovery BIOS / Desk Update / Multi Boot  ### ADD Password / HDD Encryption / EraseDisk / TPM  ### BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog  ### Logo Boot Option / Intel On Screen Branding  ### Logo Boot Option / Intel On Screen Branding  ### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ### Mainboard operating temperature range (chassis inside)  ### Internal Connectors  ### DIMM Sockets (DDR3-1600)  ### PCI Express x16 Slot (Gen3)  ### PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  ### PCI Slots (32Bit, 33 MHz, Rev. 2.3)  ### SATA-600 / SATA-300 / ATA / Floppy  ### SATA-600 / SATA-300	FAN controlled PSU 1) / CPU / AUX1 / AUX2	-   🗸   🗸   -
Silent Fan / Silent Fan LT / System Guard / Silent Drives  Recovery BIOS / Desk Update / Multi Boot  ### Recovery BIOS / Desk Update / Multi Boot  ### Recovery BIOS / Desk Update / Multi Boot  #### Recovery BIOS / Desk Update / Multi Boot  #### Rospost Watchdog / BIOS Boot Watchdog / OS HW Watchdog  #### Dop Password / HDD Encryption / EraseDisk / TPM  #### BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog  #### Post of Post o	TEMP monitored CPU / ONB / OFFB	<b>√</b>   <b>√</b>   -
Recovery BIOS / Desk Update / Multi Boot  HDD Password / HDD Encryption / EraseDisk / TPM  ### Provided Recovery 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)  #### Provided Recovery Biology  Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  #### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ##### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ######### Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ##################################	Special Features	
HDD Password / HDD Encryption / EraseDisk / TPM  BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog  Logo Boot Option / Intel On Screen Branding  W / ✓  High Efficiency Core Voltage Regulator Design  Operating Mode 24-7 / 8-5 (hrs per day - days per week)  Mainboard operating temperature range (chassis inside)  Internal Connectors  DIMM Sockets (DDR3-1600)  PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4 / 1 / 0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  1 rierWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  Serial (FIFO, 16550 compatible)  FAN PSU 10 / CPU / AUX1 / AUX2  Serial (FIFO, 16550 compatible)  TATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort 31  AUX On Auxi / Au	Silent Fan / Silent Fan LT / System Guard / Silent Drives	<b>√</b>  -  <b>√</b>   <b>√</b>
BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog  Logo Boot Option / Intel On Screen Branding  W/V  High Efficiency Core Voltage Regulator Design  Operating Mode 24-7 / 8-5 (hrs per day - days per week)  Mainboard operating temperature range (chassis inside)  Inernal Connectors  DIMM Sockets (DDR3-1600)  PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4 / 1 / 0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  Serial (FIFO, 16550 compatible)  FAN PSU ¹¹) / CPU / AUX1 / AUX2  PATI / CPU / AUX1 / AUX2  SATA Sub D / DVI-D / DisplayPort ³¹  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort ³¹  ATM Gonectors  VGA Sub D / DVI-D / DisplayPort ³¹  LAN (R)-45)  PS/2 Mouse / Keyboard  I / 1  ENS 2.0 - VSB 3.0  Serial (RS232, FIFO, 16550 compatible)	Recovery BIOS / Desk Update / Multi Boot	<b>√</b>   <b>√</b>   <b>√</b>
BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog  Logo Boot Option / Intel On Screen Branding  W/V  High Efficiency Core Voltage Regulator Design  Operating Mode 24-7 / 8-5 (hrs per day - days per week)  Mainboard operating temperature range (chassis inside)  Inernal Connectors  DIMM Sockets (DDR3-1600)  PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4 / 1 / 0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  Serial (FIFO, 16550 compatible)  FAN PSU ¹¹) / CPU / AUX1 / AUX2  PATI / CPU / AUX1 / AUX2  SATA Sub D / DVI-D / DisplayPort ³¹  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort ³¹  ATM Gonectors  VGA Sub D / DVI-D / DisplayPort ³¹  LAN (R)-45)  PS/2 Mouse / Keyboard  I / 1  ENS 2.0 - VSB 3.0  Serial (RS232, FIFO, 16550 compatible)	HDD Password / HDD Encryption / EraseDisk / TPM	<b>√</b>  -  <b>√</b>   <b>√</b>
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)  Internal Connectors  DIMM Sockets (DDR3-1600)  PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4 / 1 / 0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  Serial (FIFO, 16550 compatible)  FAN PSU ¹¹/ CPU / AUX1 / AUX2  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector ²¹  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort ³¹  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  S/PDIF (digital Audio, optical) OUT  LAN (R]-45)  1 / PS/2 Mouse / Keyboard  1 / 1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  Serial (RS232, FIFO, 16550 compatible)  1 / 2  Serial (RS232, FIFO, 16550 compatible)	BIOS POST Watchdog / BIOS Boot Watchdog / OS HW Watchdog	- / - / -
High Efficiency Core Voltage Regulator Design  Operating Mode 24-7 / 8-5 (hrs per day - days per week)  ✓/-  Mainboard operating temperature range (chassis inside)  Internal Connectors  DIMM Sockets (DDR3-1600)  PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  Serial (FIFO, 16550 compatible)  FAN PSU ¹¹/ CPU / AUX1 / AUX2  Serial (FIFO, 16550 compatible)  FAN PSU ¹¹/ CPU / AUX1 / AUX2  -/ 1 / 1 / -  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector ²¹  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  -/ ✓  External Connectors  VGA Sub D / DVI-D / DisplayPort ³¹  Audio Mic. In / Line out (or driver configuration)  1 / 1 / 1  S/PDIF (digital Audio, optical) OUT  - LAN (R]-45)  PS/2 Mouse / Keyboard  1 / 1  LAN (R]-45)  1 PS/2 Mouse / Keyboard  1 / 1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  Serial (RS232, FIFO, 16550 compatible)	Logo Boot Option / Intel On Screen Branding	V   V
Operating Mode 24-7 / 8-5 (hrs per day - days per week)         ✓ / -           Mainboard operating temperature range (chassis inside)         10°C - 45°C           Internal Connectors         Internal Connectors           DIMM Sockets (DDR3-1600)         4           PCI Express x16 Slot (Gen3)         1           PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)         1 / 2           PCI Slots (32Bit, 33 MHz, Rev. 2.3)         -           SATA-600 / SATA-300 / ATA / Floppy         4 / 1 / 0 / 0           S/PDIF (digital Audio) OUT / IN         - / -           Frontpanel Audio (9-Pin, HD Audio)         1           FireWire™ (9-Pin, Intel standard header)         -           USB 2.0 channels / USB 3.0 channels         4 / 2           Serial (FIFO, 16550 compatible)         -           FAN PSU ¹¹ / CPU / AUX1 / AUX2         -/ 1 / 1 / 1 / -           SMBus (Case Temperature)         -           Intrusion (Case Open)         1           Parallel (EPP/ECP) Pin Connector ²¹         1           ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply         - / ✓           External Connectors         1           VGA Sub D / DVI-D / DisplayPort ³¹         1 / 1 / 1           Audio Mic. In / Line in / Line out (or driver configuration)         1 / 1 / 1           S/PD	High Efficiency Core Voltage Regulator Design	✓
Mainboard operating temperature range (chassis inside)       10°C − 45°C         Internal Connectors       10°M Sockets (DDR3-1600)         PCI Express x16 Slot (Gen3)       1         PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)       1/2         PCI Slots (32Bit, 33 MHz, Rev. 2.3)       -         SATA-600 / SATA-300 / ATA / Floppy       4/1 / 0 / 0         S/PDIF (digital Audio) OUT / IN       -/-         Frontpanel Audio (9-Pin, HD Audio)       1         FireWire™ (9-Pin, Intel standard header)       -         USB 2.0 channels / USB 3.0 channels       4 / 2         Serial (FIFO, 16550 compatible)       -         FAN PSU ¹¹/ CPU / AUX1 / AUX2       -/11/1/-         SMBus (Case Temperature)       -         Intrusion (Case Open)       1         Parallel (EPP/ECP) Pin Connector ²¹       1         ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply       - / ✓         External Connectors       1         VGA Sub D / DVI-D / DisplayPort ³¹       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (R)-45)       1         PS/2 Mouse / Keyboard	Operating Mode 24-7 / 8-5 (hrs per day - days per week)	<b>√</b> / -
Internal Connectors		10°C − 45°C
PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4/11/0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  4 / 2  Serial (FIFO, 16550 compatible)  FAN PSU 1/ CPU / AUX1 / AUX2  -/11/1 /-  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector 2/  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort 3/  Audio Mic. In / Line in / Line out (or driver configuration)  1/1/1  Audio Mic. In / Line in / Line out (or driver configuration)  1/1/1  S/PDIF (digital Audio, optical) OUT  LAN (R)-45)  PS/2 Mouse / Keyboard  1/1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  4 / 2  Serial (RS232, FIFO, 16550 compatible)  1		
PCI Express x16 Slot (Gen3)  PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4/11/0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  4 / 2  Serial (FIFO, 16550 compatible)  FAN PSU 1/ CPU / AUX1 / AUX2  -/11/1 /-  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector 2/  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort 3/  Audio Mic. In / Line in / Line out (or driver configuration)  1/1/1  Audio Mic. In / Line in / Line out (or driver configuration)  1/1/1  S/PDIF (digital Audio, optical) OUT  LAN (R)-45)  PS/2 Mouse / Keyboard  1/1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  4 / 2  Serial (RS232, FIFO, 16550 compatible)  1	DIMM Sockets (DDR3-1600)	4
PCI Express x16 Slot (4 Lanes, Gen2) / x1 Slot (Gen2)  PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4/11/0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  4 / 2  Serial (FIFO, 16550 compatible)  FAN PSU 11 / CPU / AUX1 / AUX2  -/11/1/-  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector 21  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  - ✓  External Connectors  VGA Sub D / DVI-D / DisplayPort 31  Audio Mic. In / Line in / Line out (or driver configuration)  1/1/1  Audio Mic. In / Line in / Line out (or driver configuration)  1/1/1  S/PDIF (digital Audio, optical) OUT  LAN (R)-45)  PS/2 Mouse / Keyboard  1/1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  4 / 2  Serial (RS232, FIFO, 16550 compatible)  1		1
PCI Slots (32Bit, 33 MHz, Rev. 2.3)  SATA-600 / SATA-300 / ATA / Floppy  4/11/0 / 0  S/PDIF (digital Audio) OUT / IN  Frontpanel Audio (9-Pin, HD Audio)  1  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  4 / 2  Serial (FIFO, 16550 compatible)  FAN PSU ¹¹ / CPU / AUX1 / AUX2  -/11/1/-  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector ²¹  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  - ✓  External Connectors  VGA Sub D / DVI-D / DisplayPort ³¹  Audio Mic. In / Line in / Line out (or driver configuration)  1/11/1  Audio Mic. In / Line in / Line out (or driver configuration)  1/11/1  S/PDIF (digital Audio, cinch) OUT / IN  -/-  S/PDIF (digital Audio, optical) OUT  LAN (R)-45)  PS/2 Mouse / Keyboard  1/1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  4/2  Serial (RS232, FIFO, 16550 compatible)  1		1/2
SATA-600 / SATA-300 / ATA / Floppy       4 / 1 / 0 / 0         S/PDIF (digital Audio) OUT / IN       -/-         Frontpanel Audio (9-Pin, HD Audio)       1         FireWire™ (9-Pin, Intel standard header)       -         USB 2.0 channels / USB 3.0 channels       4 / 2         Serial (FIFO, 16550 compatible)       -         FAN PSU <sup>1)</sup> / CPU / AUX1 / AUX2       -/11/1/-         SMBus (Case Temperature)       -         Intrusion (Case Open)       1         Parallel (EPP/ECP) Pin Connector <sup>2)</sup> 1         ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply       - / ✓         External Connectors       VGA Sub D / DVI-D / DisplayPort <sup>3)</sup> 1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         IreWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		-
S/PDIF (digital Audio) OUT / IN       - / -         Frontpanel Audio (9-Pin, HD Audio)       1         FireWire™ (9-Pin, Intel standard header)       -         USB 2.0 channels / USB 3.0 channels       4 / 2         Serial (FIFO, 16550 compatible)       -         FAN PSU ¹¹ / CPU / AUX1 / AUX2       - / 1 / 1 / 1 / -         SMBus (Case Temperature)       -         Intrusion (Case Open)       1         Parallel (EPP/ECP) Pin Connector ²¹       1         ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply       - / ✓         External Connectors       VGA Sub D / DVI-D / DisplayPort ³¹       1 / 1 / 1         VGA Sub D / DVI-D / DisplayPort ³¹       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		4/1/0/0
Frontpanel Audio (9-Pin, HD Audio)  FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  4 / 2  Serial (FIFO, 16550 compatible)  FAN PSU 11 / CPU / AUX1 / AUX2  - / 1 / 1 / -  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector 21  ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  - / ✓  External Connectors  VGA Sub D / DVI-D / DisplayPort 31  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  5/PDIF (digital Audio, cinch) OUT / IN  - / -  S/PDIF (digital Audio, optical) OUT  - LAN (RJ-45)  1  PS/2 Mouse / Keyboard  1 / 1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  4 / 2  Serial (RS232, FIFO, 16550 compatible)	S/PDIF (digital Audio) OUT / IN	-/-
FireWire™ (9-Pin, Intel standard header)  USB 2.0 channels / USB 3.0 channels  4 / 2  Serial (FIFO, 16550 compatible)  FAN PSU <sup>1)</sup> / CPU / AUX1 / AUX2  -/11/1/-  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector <sup>2)</sup> ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  - / ✓  External Connectors  VGA Sub D / DVI-D / DisplayPort <sup>3)</sup> 1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration)  1 / 1 / 1  S/PDIF (digital Audio, cinch) OUT / IN  -/- S/PDIF (digital Audio, optical) OUT  LAN (RJ-45)  1 / PS/2 Mouse / Keyboard  LAN (RJ-45)  1 / PS/2 Mouse / Keyboard  1 / 1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  4 / 2  Serial (RS232, FIFO, 16550 compatible)		1
USB 2.0 channels / USB 3.0 channels  Serial (FIFO, 16550 compatible)  FAN PSU <sup>1)</sup> / CPU / AUX1 / AUX2  -/11/1/-  SMBus (Case Temperature)  Intrusion (Case Open)  Parallel (EPP/ECP) Pin Connector <sup>2)</sup> ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  -/ ✓  External Connectors  VGA Sub D / DVI-D / DisplayPort <sup>3)</sup> Audio Mic. In / Line in / Line out (or driver configuration)  1/1/1  S/PDIF (digital Audio, cinch) OUT / IN  -/-  S/PDIF (digital Audio, optical) OUT  -AN (RJ-45)  1  PS/2 Mouse / Keyboard  1/1  FireWire™ (6-Pin, IEEE 1394)  USB 2.0 / USB 3.0  4/2  Serial (RS232, FIFO, 16550 compatible)	FireWire™ (9-Pin, Intel standard header)	-
Serial (FIFO, 16550 compatible)       -         FAN PSU ¹¹ / CPU / AUX1 / AUX2       -/11/1/-         SMBus (Case Temperature)       -         Intrusion (Case Open)       1         Parallel (EPP/ECP) Pin Connector ²¹       1         ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply       - / ✓         External Connectors       VGA Sub D / DVI-D / DisplayPort ³¹       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		4/2
FAN PSU <sup>1)</sup> / CPU / AUX1 / AUX2		-
SMBus (Case Temperature)       -         Intrusion (Case Open)       1         Parallel (EPP/ECP) Pin Connector 21       1         ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply       - / ✓         External Connectors       VGA Sub D / DVI-D / DisplayPort 31       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		-/1/1/-
Intrusion (Case Open)       1         Parallel (EPP/ECP) Pin Connector 2)       1         ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply       - / ✓         External Connectors       VGA Sub D / DVI-D / DisplayPort 3)       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		-
Parallel (EPP/ECP) Pin Connector 2)       1         ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply       - / ✓         External Connectors       1 / 1 / 1         VGA Sub D / DVI-D / DisplayPort 3)       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		1
ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply  External Connectors  VGA Sub D / DVI-D / DisplayPort 31 1 / 1 / 1  Audio Mic. In / Line in / Line out (or driver configuration) 1 / 1 / 1 / 1  S/PDIF (digital Audio, cinch) OUT / IN -/-  S/PDIF (digital Audio, optical) OUT -  LAN (RJ-45) 1  PS/2 Mouse / Keyboard 1 / 1  LAN (RJ-45) 1  PS/2 Mouse / Keyboard 1 / 1  FireWire™ (6-Pin, IEEE 1394) -  USB 2.0 / USB 3.0 4 / 2  Serial (RS232, FIFO, 16550 compatible) 1	Parallel (EPP/ECP) Pin Connector 2)	1
External Connectors         VGA Sub D / DVI-D / DisplayPort ³¹       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       -/-         S/PDIF (digital Audio, optical) OUT       -         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1	ATX Power Supply (24 pin + 4 pin) / 12V-only PowerSupply	- / ✓
VGA Sub D / DVI-D / DisplayPort ³¹       1 / 1 / 1         Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       -/-         S/PDIF (digital Audio, optical) OUT       -         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (R)-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1	External Connectors	
Audio Mic. In / Line in / Line out (or driver configuration)       1 / 1 / 1         S/PDIF (digital Audio, cinch) OUT / IN       - / -         S/PDIF (digital Audio, optical) OUT       -         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1	VGA Sub D / DVI-D / DisplayPort 3)	1/1/1
S/PDIF (digital Audio, cinch) OUT / IN       -/-         S/PDIF (digital Audio, optical) OUT       -         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1	Audio Mic. In / Line in / Line out (or driver configuration)	1/1/1
S/PDIF (digital Audio, optical) OUT       -         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1	S/PDIF (digital Audio, cinch) OUT / IN	-/-
LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1	S/PDIF (digital Audio, optical) OUT	-
LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		1
LAN (RJ-45)       1         PS/2 Mouse / Keyboard       1 / 1         FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		1/1
FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1		1
FireWire™ (6-Pin, IEEE 1394)       -         USB 2.0 / USB 3.0       4 / 2         Serial (RS232, FIFO, 16550 compatible)       1	PS/2 Mouse / Keyboard	1 / 1
USB 2.0 / USB 3.0 4 / 2 Serial (RS232, FIFO, 16550 compatible) 1	FireWire™ (6-Pin, IEEE 1394)	-
Serial (RS232, FIFO, 16550 compatible) 1 Parallel (EPP/ECP) 2) -		4/2
Parallel (EPP/ECP) <sup>2)</sup> -	Serial (RS232, FIFO, 16550 compatible)	1
	Parallel (EPP/ECP) 2)	-

- Not supported by standard Power Supplies
   External parallel port possible via optional connector cable
- External parallel port possible via optional connector cable
   Second Display Port possible via PCle x4-Adapter D3213

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## More information

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