FUJITSU

Data Sheet
FUJITSU Mainboard D3598-G ATX
Extended Lifecycle Series

Preliminary

Powered by the Intel® X299 Workstation chipset (BasinFalls), quad channel DDR4 2666
U-DIMM memory and Intel® Core™ High Performance i7 & i9 X-series processors (SKL-X; LGA2066)
Designed & approved for 24/7 continuous operation

Chipset:
Intel® X299 Workstation Chipset
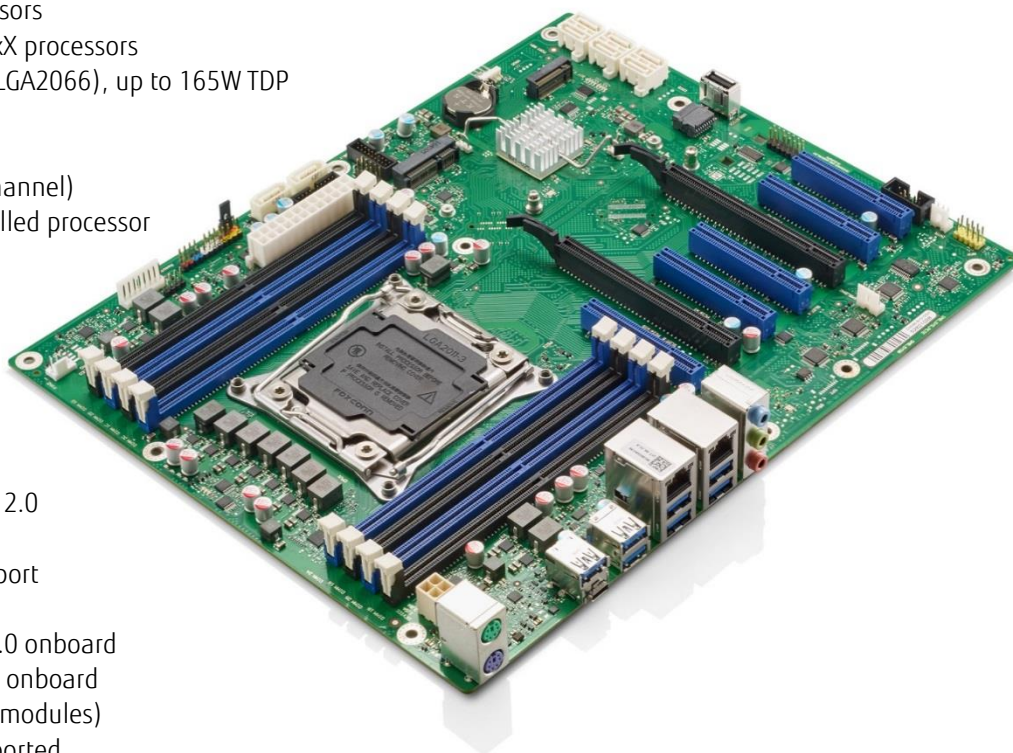
Processors:
Intel® Core™ i7-78xxX / -98xxX processors
Intel® Core™ i9-79xxX / -98xxX / -99xxX processors
Skylake-X processor series, socket R (LGA2066), up to 165W TDP

Memory:
DDR4 2666 SDRAM (U-DIMM, quad channel)
(memory speed may depend on installed processor
and memory configuration)
Up to 128GB memory

Product Features:
Mini-PCIe socket incl. USB 2.0
7 x PCIe generation 3 onboard
5.1 multichannel audio onboard
USB 3.1 Gen2, USB 3.1 Gen1 and USB 2.0
USB 3.1 Gen2 Type C
Dual Intel GbE LAN incl. Teaming support
8 x Serial ATA III incl. RAID onboard
Trusted Platform Modul (Infineon) V2.0 onboard
BIOS-POST/-Boot & OS - HW Watchdog onboard
M.2 SSD 2280 socket (PCIe, for NVMe modules)
Intel® vroc (Virtual RAID on CPU) supported
Intel® Optane™ memory supported

Features and benefits

Board Size	ATX: 12" x 9.6" (305 x 244 mm)
Chipset	Intel® "Basin Falls" X299 Workstation chipset
Memory	8 DIMM Sockets DDR4, max. 128GB, up to 4 channels Single- / dual- rank UDIMM DDR4 2133 / 2400 / 2666, 1.2V, 288-pin, non-ECC Effective memory speed may depend on installed processor and memory configuration
Processors	Intel® Skylake-X series processors Intel® Core™ i7-78xxX / -98xxX Processors Intel® Core™ i9-79xxX / -98xxX / -99xxX Processors Socket R4 (LGA2066), max. 165W TDP, integrated Memory Controller (For details on supported processors please refer to OEM FTP Server)
Power Specification	24 Pin Power Connector + 8 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 high-efficiency CPU Voltage Regulator, 5V / 2A Auxiliary Power required for USB Wake-Up from Save-to-RAM, Save-to-Disk

Power Supply Requirements

Source	Voltage	Min. PS Load	Max.Voltage Tolerance	Mainboard Capacitive Load	Mainboard Max. Current (continuous)
Main Power Supply	+ 12 V_{CPU} (Rail#2)	0.05A [A)]	± 5 %	1.000µF	~45A [B,C)]
	+ 12 V_{CPU} (Rail#3)			1.000µF	
	+ 12 V_{Sys} (Rail#1)			1.000µF	
	- 12V	0A	--	--	--
	+ 5V	0.05A	± 5 %	2.200µF	~ 28A [C)]
	+ 3.3V	0.05A	± 5 %	2.000µF	~ 20A [C)]
Aux	+ 5Vaux	0A	+5 % / -3%	2.200µF	~ 2A [C)]

A) Combined load for all 12V Rails.   B) Thereof processor peak current up to 32A (<250ms)
C) Depends on system configuration (Main focus: 12V/3.3V: PCIe Slots; 5V: Memory/USB)
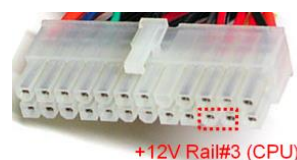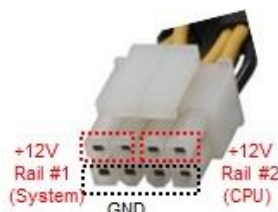
Note: (further required rails 5V, 3.3V etc. not shown here)

+12V rails: Each +12V/GND PSU pin must support up to 10A continuous current for full system configuration. Single-rail 12V supply instead of three separate 12V rails is possible. See TechNotes document (FTP) for further details.

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-A (PCIe-based SSD modules, NVME required).
	BIOS integrated HW Diagnostic Tool
Security Features	Recovery BIOS, System and BIOS Password, Boot Sequence Control, Serial/USB- Port Access Protection, Boot Sector Virus Warning, Write Protection for Flash BIOS, EraseDisk (optional BIOS Feature), Trusted Platform Module TPM V2.0 (Infineon SLB9670)
Audio	Realtek ALC671, 5.1 Multichannel, High Definition Audio
USB 3.1 Gen2	ASMedia ASM1142
LAN	Intel i219LM / Intel i210 Ethernet Controller 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
Drives	8 x SATA III 600 Interfaces (up to 6GBit/s, NCQ); AHCI; RAID 0/1/10.
	1 x M.2 Socket (2280) for PCIe (4 lanes) based M.2 modules (NVME required), NVME Boot support
	Support for Intel® Optane™ and Intel® vroc (Virtual RAID on CPU)

Special Features		
	Silent Fan	Independent temperature related processor fan and system fan supervision and control
	System Guard	View and adjust Silent Fan features
	Recovery BIOS	Restores a corrupted BIOS
	Desk Update	Easy driver update with Drivers&Utilities DVD
	Multi Boot	Comfortable boot from any boot device
	HDD Password	Access protection for disk drives
	24/7 Operation	Mainboard is designed for continuous operation
	Boot Watchdog	Full supervision of BIOS POST and Boot sequence
	CSA / UL compliance	cTÜVus possible upon request
	FCC compliance	FCC-B verified (planned)

Operating Systems	OS	"Runnable"	"Tested/Released by Fujitsu"
	MS Windows 7-64	---	
	MS Windows 10-64	X	X [1]
	Linux-64	X	

Graphics	SLI-Certification for Nvidia Quadro cards: tbd

1 Test / Release based on MS Windows 10 RS5

Features D3598-G	Board Size / Chipset	ATX / Intel X299
	Stereo Audio / 5.1 Multichannel Audio	- / ✓
	Buzzer / int. Speaker Support	✓ / ✓
	Dual LAN Gbit / 100 Mbit / 10 Mbit	✓ / ✓ / ✓
	DASH / AoL / Boot / iAMT 11.6 / vPro	- / - / ✓ / - / -
	SATA / SATA RAID / eSATA Support / M.2 (PCIe x4) / NVME RAID	✓ / ✓ / ✓ / ✓ / -
	USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 / USB 3.1 Gen2 Type C	✓ / ✓ / ✓ / ✓
	FAN controlled & monitored PSU [2] / CPU / AUX1 / AUX2 / AUX3	✓ / ✓ / ✓ / ✓ / ✓
	TEMP monitored CPU / Onboard Sensors	✓ / ✓
Special Features D3598-G	Silent Fan / System Guard	✓ / ✓
	Recovery BIOS / Desk Update / Multi Boot	✓ / ✓ / ✓
	HDD Password / USB Security / EraseDisk [3]	✓ / ✓ / ✓
	Logo Boot Option / Intel On Screen Branding	✓ / ✓
	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)	10°C – 50°C
	Support for additional M.2 SSD modules (via M.2 carrier board D3352) [4]	✓
Internal Connectors D3598-G	DIMM Sockets (UDIMM DDR4 2666MHz)	8
	PCI Express x16: 16lanes-gen3 [5]	2
	PCI Express x8: 8 lanes-gen3 / 4 lanes-gen3 / 1 lane-gen3 [5]	1 / 2 / 2
	SATA (600) / SATA (300) / M.2 SSD	8 / 0 / 1
	S/PDIF / FireWire™ / Audio Input / Front Panel HD Audio (9-Pin)	- / - / - / 1
	USB 2.0 channels / USB 3.1 Gen1 channels / USB 3.1 Gen2 channels / socket for USB2.0 stick / USB 2.0 via Mini-PCIe socket	2 / 4 / 0 / 1 / 1
	Serial (FIFO, 16550 compatible) / SMBus Access	1 / -
	FAN PSU [2] / CPU / AUX1 / AUX2 / AUX3	1 / 1 / 1 / 1 / 1
	Intrusion (Case Open)	1
	Intel® vroc license dongle connector	1
	Parallel (EPP/ECP) Pin Connector	-
	Power 24 Pin (BTX) / 8 Pin (additional 12V Supply)	1 / 1
External Connectors D3598-G	Graphics	-
	Audio Mic. In / Line in / Line out	1 / 1 / 1
	LAN (RJ-45) / PS/2 Mouse / PS/2 Keyboard	2 / 1 / 1
	FireWire™ / Serial (RS232) / Parallel (EPP/ECP)	- / - / -
	USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 Type A / USB 3.1 Gen2 Type C	- / 6 / 1 / 1

2 Not supported by standard Power Supplies

3 Optional BIOS Feature (license required)

4 D3598-G supports up to two carrier boards D3352-A2 (= max. 4 x M.2 SSD modules)

5 Reduced PCIe lane support for i7-78xxx processors

External Connectors

LAN2   LAN1 (iAMT)

PS/2
Kbd/Mouse

USB 3.1 Gen2
Type A / Type C

6 x USB 3.1 Gen1
Type A

3 x Audio
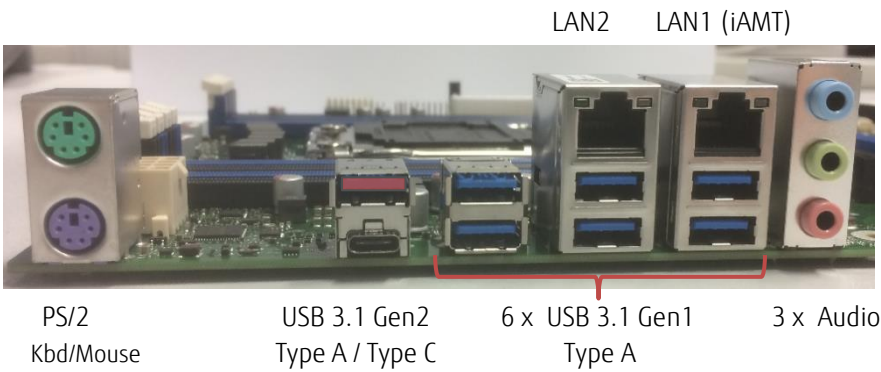
Connector / Socket Diagram
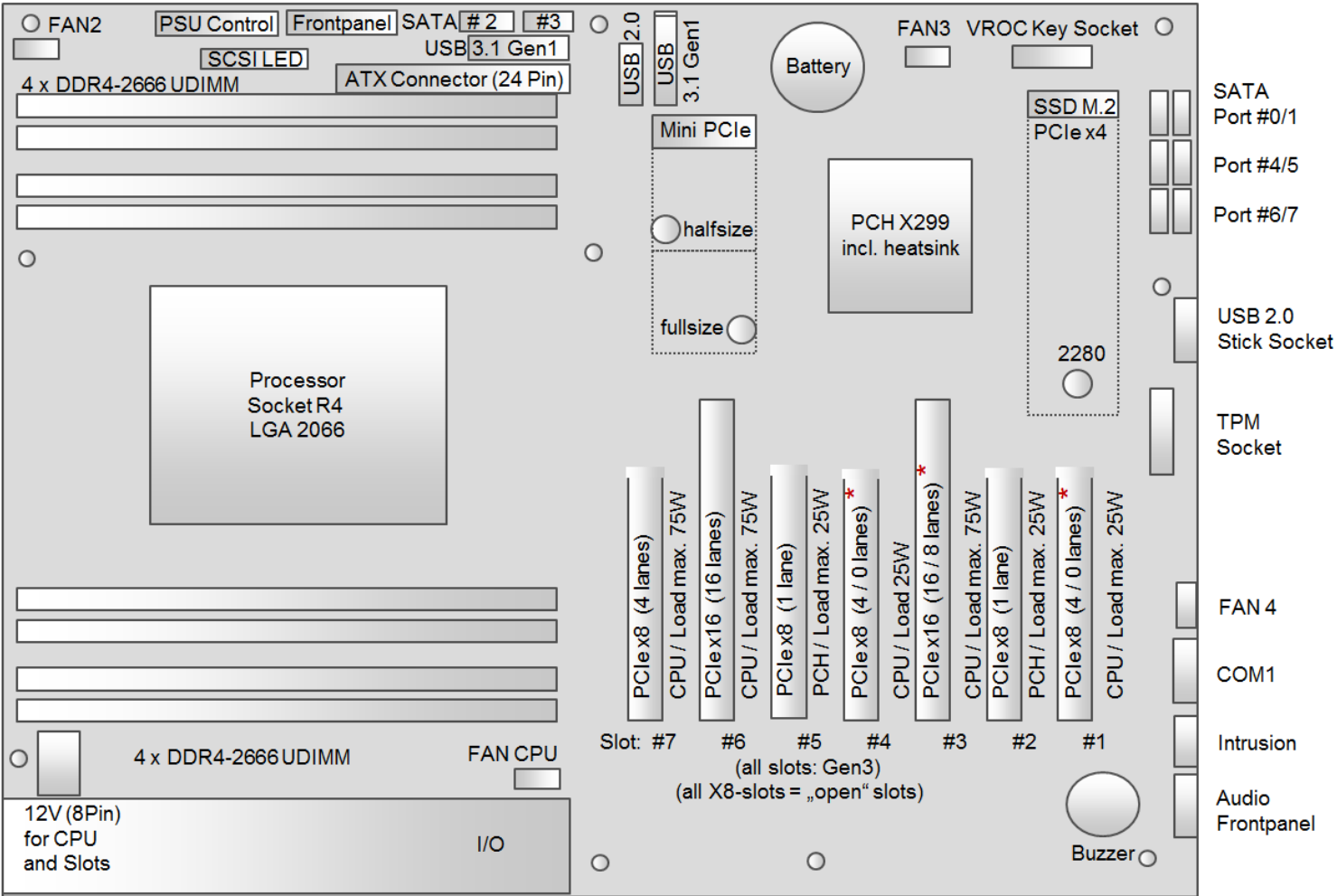
* *Reduced # of supported lanes for i7-78xxx processors only*

Accessories

Adapter Board PCIe to M.2 2230 (for WiFi modules)	D3436-S	S26361-F5000-M3	
Serial Port Cable "ATX Slotbracket"		S26361-F5000-K005	
M.2 Carrier Board (2 x M.2) (for PCIe/NVME modules)	D3352-A2	S26361-F5000-M2	
M.2 Carrier Board (1 x M.2) (for PCIe/NVME module)	D3352-A1	S26361-F5000-M1	

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

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- Network

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Fujitsu green policy innovation

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More information

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