



Data Sheet

FUJITSU Mainboard D3544-S Mini-STX

Industrial Series

- preliminary -

Intel® embedded Gemini Lake SoC (System on Chip) for DDR4 2400 SDRAM Memory
Enhanced operating temperature range from 0°C to 60°C



Processors (SoC):

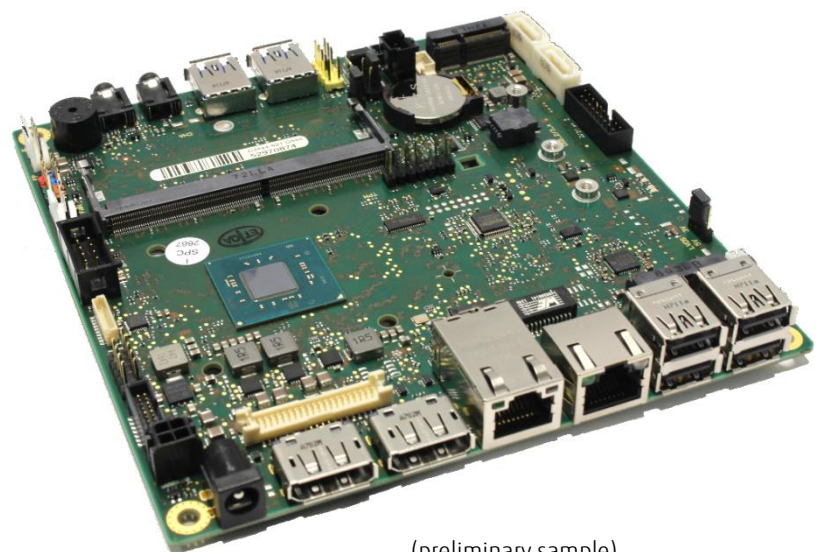
Intel® Celeron® Processor J4105 (QC @2.5GHz) with integrated Intel® UHD Graphics 600 (12EUs @750MHz)
Intel® Celeron® Processor J4005 (DC @2.7GHz) with integrated Intel® UHD Graphics 600 (12EUs @700MHz)
10W TDP

Memory:

DDR4 2400 SDRAM (SO-DIMM)

Product Features:

- Intel® UHD Graphics 600 (within SoC)
- 2x DisplayPort V1.2
- Dual Channel LVDS (24Bit) and eDP V1.4 onboard
- 8 Bit GPIO & HD Audio onboard
- USB 2.0 and USB 3.1 (gen1) onboard
- 2x SATA III
- Onboard support for M.2 SSD (SATA-based M.2)
- Onboard support for M.2 WLAN/Bluetooth module
- Dual GbE LAN onboard
- Intel® integrated TPM V2.0 onboard
- WideRange internal/external DC Input (8V - 24V)
- HW Watchdog onboard
- RS-232/485/422 support onboard



(preliminary sample)



(planned)

(planned)



Features and benefits

Board Size Mini-STX: 5.5" x 5.8" (140 x 148 mm)

Mainboard Versions

	Processor (SoC)	Graphics	Memory	Display Options
D3544-S1	Intel® Celeron® Processor J4005 (DC @2.7GHz) Max. 10W TDP	Intel® UHD Graphics 600 12EUs @700MHz (within SoC)	DDR4 / 2400 one socket max. 16GB	2 x DP V1.2 max. 4096 x 2160 @60Hz 1 x eDP V1.4 2 lanes max. 1920 x 1200
D3544-S2	Intel® Celeron® Processor J4105 (QC @2.5GHz) Max. 10W TDP	Intel® UHD Graphics 600 12EUs @750MHz (within SoC)		1 x LVDS 24Bit Dual Channel max. 1920 x 1200 max. 3 x independent display

Memory 1 x SO DIMM Socket (1.2V), max. 16GB,
DDR4 - 2400 (CL17) SDRAM, unbuffered, non-ECC

Power Specification External DC Input 8V-24V (5A max. / 50W max.) tbd
Internal DC Input 8V-24V (50W max.) tbd
Onboard SoC and system voltage regulators (high efficiency)

Power Supply Requirements for onboard components (worst case incl. memory module;
w/o USB devices; w/o M.2 device, w/o SATA devices; w/o eDP or LVDS display)

Source	Voltage	Min. PS Load	Max. Voltage Tolerance	Mainboard Capacitive Load	Max. Mainboard Current
DC-IN (wide range)	8-24V	0A	± 5 % (tbd)	tbd	tbd

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 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 SSD (SATA-based M.2, AHCI)
BIOS integrated HW Diagnostic Tool, Watchdog Support
No legacy OS support (Intel limitation)

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 (BIOS Feature), Intel integrated TPM V2.0

Special Features	Silent Fan LT System Guard Silent Drives Recovery BIOS Desk Update Multi Boot HDD Password Always On Never Off CSA / UL / FCC	Independent temperature related processor fan and system fan supervision View Silent Fan LT features Noise reduction for optical and hard disk drives Restores a corrupted BIOS Simple driver update with Driver & Utilities DVD Comfortable boot from any boot device Access protection for disk drives Reliable power-on whenever voltage is connected Option to prevent the system from being shut down cCSAus 60950-1 / FCC-B (planned)	
Operating Systems	OS MS Windows 10-64 Linux-64	"Runnable" X X	"Tested/Released by Fujitsu" X tbd
	Note: Legacy OS (DOS, MS Windows 7, ...) is not supported (Intel limitation)		
Designed for 24 / 7 use	Longlife components for 24 / 7 use (0°C – 60°C) in industrial applications Revision control & Extended Lifecycle (min. 5 years + 1 year XLC option)		
Graphics	Integrated Intel® UHD Graphics 600 2 x DisplayPort V1.2 / 1 x embedded DisplayPort (eDP) 1.4 / 1 x Dual-Channel 24bit LVDS Supports up to 3 x independent display Following max. display combinations are supported: 2 x DisplayPort (DP, external) + 1 x LVDS (internal) 2 x DisplayPort (DP, external) + 1 x embedded DisplayPort (eDP, internal) Note: Simultaneous use of LVDS and eDP is not possible		
Audio	Realtek ALC671 5.1-channel, High Definition Audio Codec		
LAN	1 x Intel i210 with 10/100/1000MBit/s, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE and iSCSI supported, BIOS MAC Address Display 1 x Realtek RTL8111G 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		
Drives	2 x Serial ATA (SATA) III 600 Interface (up to 6GBit/s), NCQ, AHCI; 1 x M.2 Key B socket (2242 / 2260 / 2280) for SATA based M.2 modules, AHCI Boot support Note: M.2 is shared with one SATA port		
WLAN / Bluetooth	1 x M.2 Key E socket (WLAN / Bluetooth), mechanical support for 2230 Supports M.2 modules with PCIe x1 (Gen3) and / or USB 2.0 interface		
LVDS	LVDS Controller Realtek RTD2136R (DisplayPort to LVDS converter)		

Features D3544-S	Chipset	Intel Gemini Lake SoC
	Board Size	Mini-STX
	DP V1.2 / 2 nd DP V1.2 / LVDS / eDP V1.4 / HDMI / DVI / VGA	✓ / ✓ / ✓ / ✓ / ✓ / - / - / -
	Buzzer / int. Speaker Support (mono) ¹ / 5.1 Multichannel Audio	✓ / ✓ / ✓ / ✓
	LAN Gbit / 100 Mbit / 10 Mbit / WoL / PXE / M.2 2230 WLAN-BT	✓ / ✓ / ✓ / ✓ / ✓ / ✓ / ✓ / ✓
	iAMT-vPro / Intel Standard Manageability / DASH V1.1	- / - / -
	SATA / M.2 SSD (SATA) / eSATA-Support / RAID / mSATA	✓ / ✓ / ✓ / ✓ / - / - / -
	USB 2.0 / USB 3.1 (gen1) / FireWire™	✓ / ✓ / -
	FAN monitored & controlled PSU / CPU / AUX1 / AUX2	- / ✓ / - / -
	TEMP monitored CPU / onboard sensors / external sensor	✓ / ✓ / -
Special Features D3544-S	Silent Fan / Silent Fan LT / System Guard / Silent Drives	- / ✓ / ✓ / ✓ / ✓
	Recovery BIOS / Desk Update / Multi Boot	✓ / ✓ / ✓ / ✓
	HDD Password / EraseDisk ² / TPM V1.2 / TPM V2.0	✓ / ✓ / - / - / ✓
	Logo Boot Option / Intel On Screen Branding	✓ / ✓
	High Efficiency 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) ³	0°C – 60°C
Internal Connectors D3544-S	SO DIMM Sockets (DDR4 2400)	1
	SATA-600 / M.2 SSD ⁴ / M.2 WLAN-BT / mSATA	2 / 1 / 1 / -
	Front Panel Audio (9-Pin, HD Audio)	1
	USB 2.0 pin header (provides 1 USB channel) / USB Stick socket	1 / -
	USB 3.1/gen1 pin header (provides 2 USB channels) ⁵	1
	Serial COM1 (RS-232 / -422 / -485; pin header 2mm pitch)	1
	Serial COM2 (RS-232; specific connector) ⁶ / Parallel Port header	tbd / -
	LVDS / LVDS Backlight / Embedded DisplayPort	1 / 1 / 1
	FAN PSU / CPU (PWM) / AUX1 (PWM)	- / 1 / -
	Intrusion (Case Open) / GPIO (8Bit) / SMBus (Case Temp.)	1 / 1 / -
	Internal Mono Speaker header / Internal Stereo Speaker header	1 / -
	DMIC header (digital microphone)	-
	Frontpanel (Power Switch, Reset Switch, LEDs, Intel 10 pin header)	1
	Onboard SATA Drive Power Connector (5V/12V tbd)	1
	Onboard (internal) DC-In Connector 8-24V (4 pin)	1
External Connectors D3544-S	DisplayPort V1.2 / HDMI / DVI / VGA	2 / - / - / -
	Audio Mic. In / Line in / Line out (or driver configuration)	1 / - / 1
	LAN (RJ-45)	2
	PS/2 Keyboard / Mouse	- / -
	USB 2.0 / USB 3.1	4 / 2
	DC-In connector (external input) 8-24V @ 5A max.	1

1 Mono speaker support; max. 2.2W @4Ω / 1.3W @8Ω

2 BIOS feature; License included

3 Forced cooling required for high operating temperature range. See upcoming TechNotes document for details

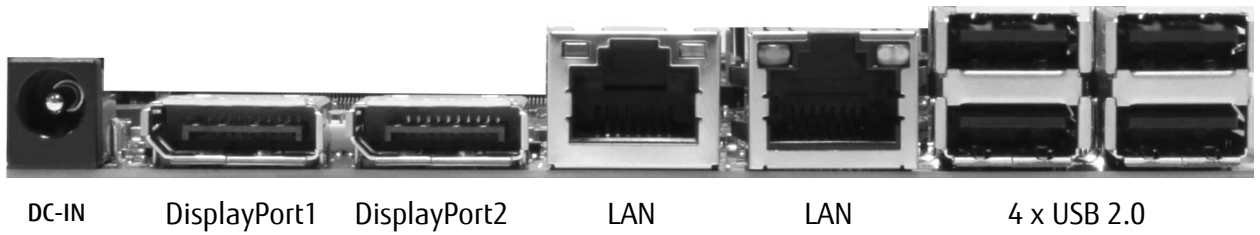
4 M.2 SSD shared with one SATA port

5 USB3 connector includes separate USB2.0 signal pins (2 channels)

6 Reduced functionality + specific connector cable (incl. RS-232 line driver) required. See upcoming TechNotes document for details

External Connectors

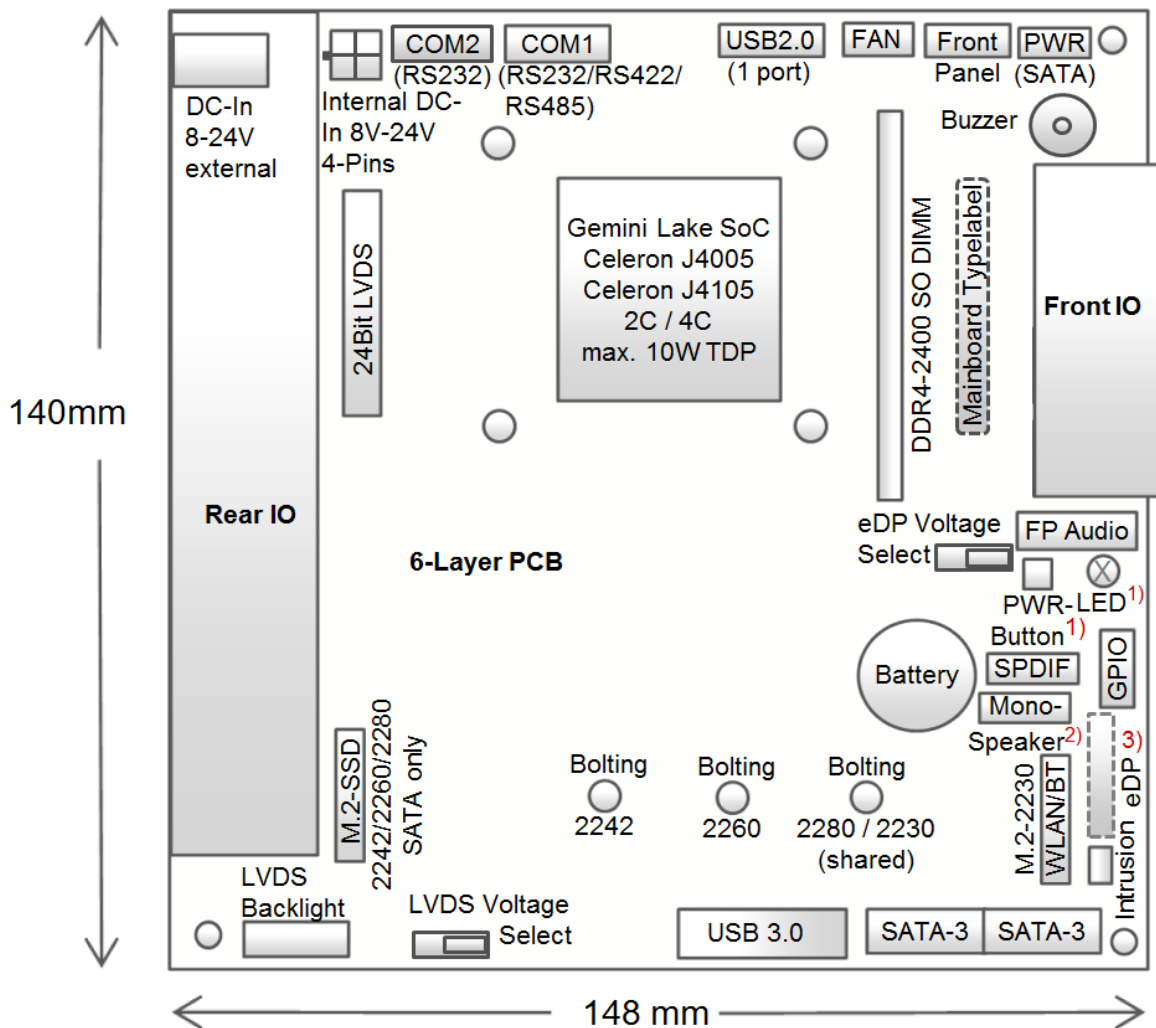
Rear I/O:



Front I/O:



Connector / Socket Diagram



- 1) Onboard power button (push button) and power LED are designed for usage in Fujitsu STX chassis kit
- 2) Optional speaker kit available for Fujitsu STX chassis kit
- 3) eDP (embedded DisplayPort) connector located at bottom side

Accessories

(Ordercode)

Mini-STX Chassis Kit

tbd



AC Adapter 19V / 40W

(S26113-E622) tbd

USB Typ-C Cable (USB 3.1/gen1)

tbd

Serial Port cable (COM1)

tbd

Serial Port cable
(incl. line driver, COM2 only)

tbd

Further industrial products offered by Fujitsu

- Connectors
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- 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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Contact

Fujitsu Technology Solutions GmbH
OEM Mainboard Sales

Email: oem-sales@ts.fujitsu.com

Website: <http://ts.fujitsu.com>
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