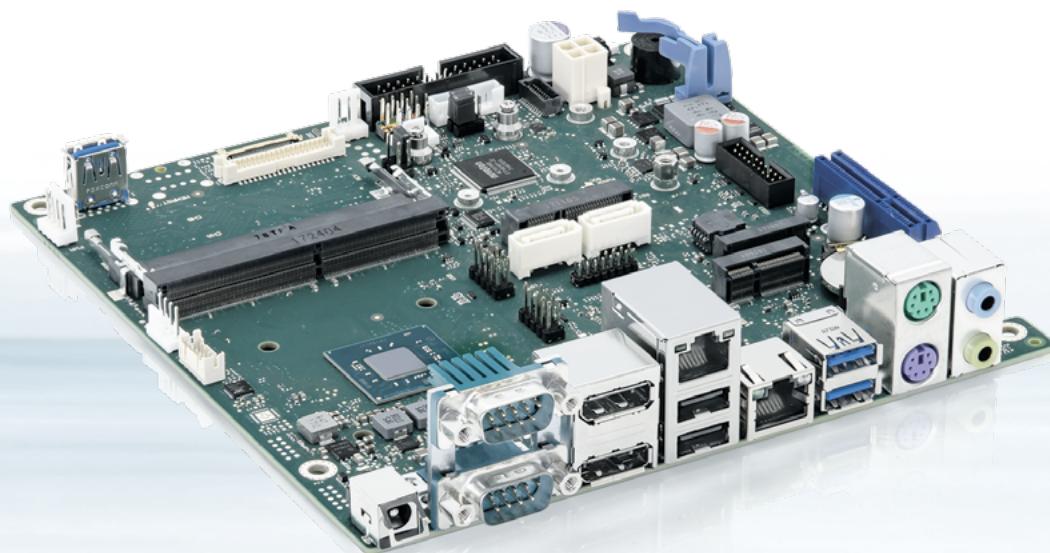


# D3543-S mITX

## Industrial Series

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### Intel® Celeron® Processor J4005/J4105 & Intel® Pentium® Silver Processor J5005

- ▶ Dual DP V1.2a, LVDS & eDP V1.4
- ▶ M.2 SSD & M.2 WLAN Slots onboard
- ▶ HW Watchdog, GPIO & PCIe Slots
- ▶ Wide Range DC Power Supply (8 V-36 V)
- ▶ Designed for Fanless Operation

POSSIBILITIES START HERE

# D3543-S mITX

## Industrial Series

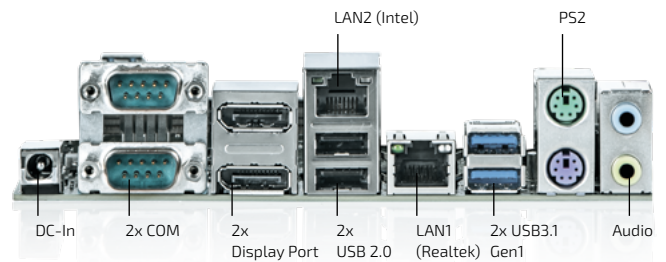
The Industrial Motherboard D3543-S mITX supports the Intel® Celeron® Processors J4005, J4105 as well as the Intel® Pentium® Processor J5005. It is also equipped with extension slots for PCIe and M.2 and connectors like USB 3.1 Gen1, 2x DP V1.2 and 4x COM.

The D3543-S mITX offers highest functionality supporting 24/7 operation mode and an enhanced operating temperature range from 0 °C to 60 °C.

### PRODUCT HIGHLIGHTS

- ▶ Intel® Celeron® Processor J4005/J4105 & Intel® Pentium® Silver Processor J5005
- ▶ DDR4 2400 SDRAM, max. 24 GByte
- ▶ Intel® UHD Graphics 600/605 (within SoC)
- ▶ 2x DisplayPort V1.2a
- ▶ 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/PCIe)
- ▶ Onboard support for M.2 WLAN/Bluetooth module
- ▶ Onboard support for Mini-PCIe
- ▶ Dual GbE LAN onboard

- ▶ Intel® integrated TPM V2.0 onboard
- ▶ WideRange internal/external DC Input (8 V - 36 V)
- ▶ HW Watchdog onboard
- ▶ RS-232/485/422 support onboard



### TECHNICAL INFORMATION

<b>SYSTEM</b>	<b>PROCESSOR</b>	Intel® Celeron® Processor J4005 (DC @2.0 GHz/2.7 GHz) Intel® Celeron® Processor J4105 (QC @1.5 GHz/2.5 GHz) Intel® Pentium® Silver Processor J5005 (QC @1.5 GHz/2.8 GHz) SoC (System on Chip) 2x SO DIMM Socket (1.2 V), max. 24 GByte, DDR4 2400 SDRAM
	<b>CHIPSET MEMORY</b>	
<b>VIDEO</b>	<b>GRAPHICS</b>	Integrated Intel® UHD Graphics 600/605
<b>AUDIO</b>	<b>AUDIO CODEC AUDIO INTERFACE</b>	Realtek ALC671 5.1-channel, High Definition Audio Codec
<b>NETWORK CONNECTION</b>	<b>ETHERNET</b>	1x Intel® i210 with 10/100/1000MBit/s, 1x Realtek RTL8111G with 10/100/1000 MBit/s
<b>PERIPHERAL CONNECTION</b>	<b>USB</b>	2x USB 2.0, 4x USB 2.0 (by header) 2x USB 3.1 Gen1 + 2x USB 3.1 Gen1 (by header) 1x USB 3.1 Gen1 stick socket
	<b>SERIAL PORT</b>	2x RS232, 1x RS232 (limited feature set, by header), 1x RS232/RS422/RS485 (limited feature set, by header)
	<b>OTHER I/Os</b>	GPIO (by header)
<b>STORAGE &amp; EXPANSION</b>	<b>SATA</b>	2x Serial ATA (SATA) III 600 Interface (up to 6Gbit/s), NCQ, AHCI; 1x M.2 Key-E (2230), 1x Mini-PCIe (halfsize/fullsize), 1x M.2 Key B socket (2242/2260/2280)
	<b>PCI/PCIe SLOTS</b>	1x PCIe x4
<b>POWER</b>	<b>CONNECTOR INPUT VOLTAGE</b>	External DC Input 8 V-36 V (5 A max. / 100 W max.) Internal DC Input 8 V-36 V (8 A max. / 100 W max.) Onboard SoC and system voltage regulators (high efficiency)
<b>FIRMWARE</b>	<b>BIOS</b>	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 (AHCI / NVME) BIOS integrated HW Diagnostic Tool, Watchdog Support No legacy OS support, no MBR installation (UEFI only due to Intel restrictions)
	<b>WATCHDOG REAL TIME CLOCK TPM</b>	2-Level WD (BIOS Boot WD / OS WD) Integrated Intel® integrated TPM V2.0

## ► TECHNICAL INFORMATION

<b>SYSTEM CONTROL</b>	<b>FP HEADER SECURITY</b>	1x Header for Reset button, HDD LED, Power button, Power LED Recovery BIOS, System and BIOS Password, Boot Sequence Control for each drive, Serial Port Access Protection, TPM 1.2, Write Protection for Flash BIOS, Harddisk Password incl. "Silent Password" option (no keyboard entry required), Erase Disk (BIOS Feature)
<b>COOLING</b>	<b>FAN</b>	2x PWM-Fan (CPU/System)
<b>SOFTWARE</b>	<b>OS SUPPORT</b>	MS Windows 10 Linux-64
<b>MECHANICAL</b>	<b>DIMENSIONS (L x W)</b>	Mini-ITX: 6.7" x 6.7" (170 x 170 mm)
<b>CERTIFICATION</b>	<b>EMC &amp; SAFETY</b>	FCC-B verified cTUVus acc. IEC62368-1 (upon request), CE Class B

\*) Long-term driver update support for RS1 (LTSB) and RS2 is not guaranteed by Intel®

## ► MOTHERBOARD VERSIONS

	<b>PROCESSOR (SoC)</b>	<b>GRAPHICS</b>	<b>MEMORY</b>	<b>GRAPHICS</b>
<b>D3543-S1</b>	Intel® Celeron® J4005 (Dual Core) 2.0 GHz / 2.7 GHz*	Intel® UHD 600 12EUs; max. 8 GByte 250 MHz / 700 MHz**	DDR4 / 2400 two sockets max. 24 GByte	2x DP V1.2 max. 4096 x 2160 @60 Hz
<b>D3543-S2</b>	Intel® Celeron® J4105 (Quad Core) 1.5 GHz / 2.5 GHz*	Intel® UHD 600 12EUs; max. 8 GByte 250 MHz / 750 MHz**		1x eDP V1.4 2 lanes max. 1920 x 1200
<b>D3543-S3</b>	Intel® Pentium® Silver J5005 (Quad Core) 1.5 GHz / 2.8 GHz*	Intel® UHD 605 18EUs; max. 8 GByte 250 MHz / 800 MHz**		1x LVDS 24Bit Dual Channel max. 1920 x 1200  max. 3x independent display ***)

\*) CPU Base Frequency / Burst Frequency

\*\*) Graphics Base Frequency / max. Dynamic Frequency

\*\*\*) Following max. display combinations are supported:

1x DisplayPort (external) + 1x LVDS (internal) + 1x embedded DisplayPort (internal)

2x DisplayPort (DP, external) + 1x embedded DisplayPort (eDP, internal)

Note: Simultaneous use of LVDS and DP2 (upper port) is not possible

## ► POWER SUPPLY REQUIREMENTS

<b>SOURCE</b>	<b>VOLTAGE RANGE</b>	<b>MIN. PS LOAD</b>	<b>MAX. VOLTAGE TOLERANCE</b>	<b>TYP. MOTHERBOARD INPUT POWER*</b>	<b>MAX. MOTHERBOARD INPUT POWER**</b>
DC-IN (wide range)	8-36 V	0 A	± 5 %	5 W - 15 W	100 W

\*) Motherboard incl. Memory and M.2 SATA SSD (MS Windows 10 Idle Mode / Full Load)

\*\*) Motherboard incl. Memory, M.2 SATA SSD, any USB Devices, any LVDS / eDP devices, any SATA devices

## TECHNICAL INFORMATION

FEATURES	Chipset DP V1.2a / 2nd DP V1.2a / LVDS / eDP V1.4 / HDMI / DVI / VGA Buzzer / int. Speaker Support / 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 (SATA) / M.2 PCIe (1 lane) / eSATA-Support / RAID / mSATA Mini-PCIe / USB 2.0 / USB 3.1 (gen1) / FireWire™ FAN monitored & controlled PSU / CPU / AUX1 / AUX2 TEMP monitored CPU / onboard sensors / external sensor	Intel Gemini Lake SoC + / + / + / + / - / - / - + / - / + + / + / + / + / + / + - / - / - + / + / + / + / - / - + / + / + / - - / + / + / - + / + / -
SPECIAL FEATURES	COM interface support for RS-232 / RS-485 / RS-422 Silent Fan / System Guard Recovery BIOS / Desk Update / Multi Boot HDD Password / EraseDisk / TPM V1.2 / TPM V2.0 Logo Boot Option BIOS POST- / BIOS Boot- / OS- HW Watchdog Operating Mode 24-7 / 8-5 (hrs per day - days per week) Motherboard operating temperature range (chassis inside)*	+ + / + + / + / + + / + / - / + + + / + / + + / - 0 °C – 60 °C
INTERNAL CONNECTORS	50 DIMM Sockets (DDR4 2400) SATA-600 / M.2 SSD** / M.2 WLAN-BT / mSATA / Mini-PCIe Front Panel Audio (9-Pin, HD Audio) / SP-DIF Out (Digital Audio) USB 2.0 pin header (provides 2 USB channels) / USB 2.0 stick socket USB 3.1 Gen1 pin header (provides 2 USB channels)*** Serial COM3 header**** / Serial COM4 header**** / Parallel Port header LVDS / LVDS Backlight / Embedded DisplayPort FAN PSU / CPU (PWM) / AUX1 (PWM) Intrusion (Case Open) / GPIO (8Bit) / SMBus (Case Temp.) Mono Speaker header / Internal Stereo Speaker header / DMIC header Front Panel (Power Switch, Reset Switch, LEDs, Intel 10 pin header) SATA Drive Power Connector (5 V/12 V) / DC-In Connector 8-36 V (4 pin)	2 2 / 1 / 1 / - / 1 1 / 1 2 / 1 1 1 / 1 / 1 1 / 1 / 1 - / 1 / 1 1 / 1 / - - / - / - 1 1 / 1
EXTERNAL CONNECTORS	DisplayPort V1.2a / HDMI / DVI / VGA Audio Mic. In / Line in / Line out (or driver configuration) LAN (RJ-45) / PS/2 Keyboard / Mouse USB 2.0 / USB 3.1 Gen1 DC-In connector (external input) 8-36 V @ 5 A max. Serial COM interface	2 / - / - / - - / 1 / 1 2 / 1 / 1 2 / 2 1 2

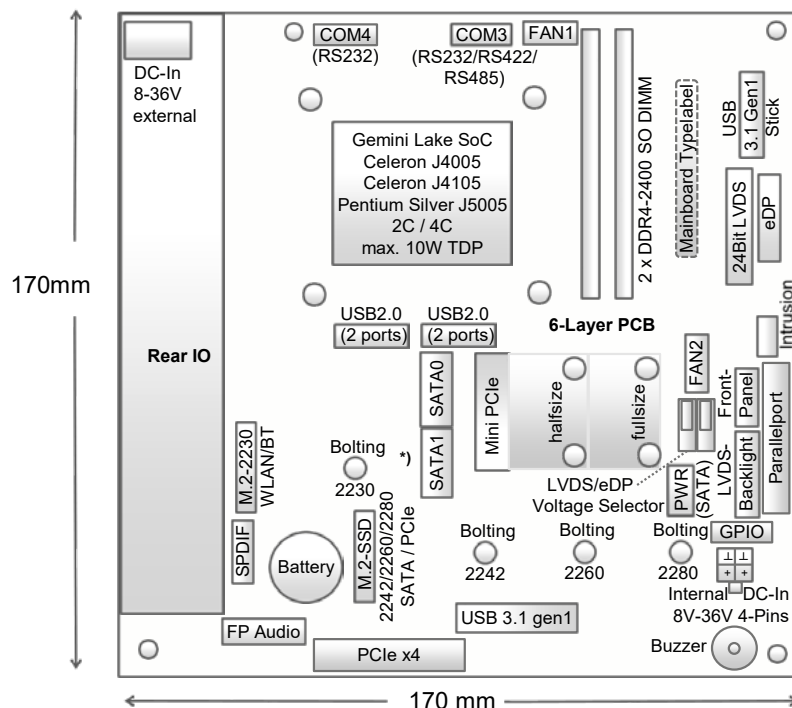
\*) Forced cooling required for high operating temperature range. See TechNotes document for details

\*\*) SATA-based M.2 SSD is shared with SATA port 1; simultaneous use of M.2 2280 module and M.2 2230 module (WLAN/Bluetooth) possible

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

\*\*\*\*) COM3 / COM4: RS-232 @ reduced feature set; pin header 2mm pitch; COM3 provides additional support for RS-422 / RS-485; specific device driver for both COM3 / COM4 supported from BIOS R1.6.0

## CONNECTOR / SOCKET DIAGRAM



\*) SATA Port1 shared with M.2 SATA-SSD