

D3445-S ATX

Industrial Series



Intel® H110 Express chipset and
Intel® 6th Gen Core™ i3/i5/i7 Processors

- ▶ Intel® HD Graphics; PCI Express® Gen3
- ▶ Multichannel Audio & Dual Intel GbE LAN onboard
- ▶ USB 2.0/3.0 onboard
- ▶ Trusted Platform Module V2.0 (Intel) onboard
- ▶ BIOS-POST/-Boot & OS – HW Watchdog onboard

POSSIBILITIES START HERE



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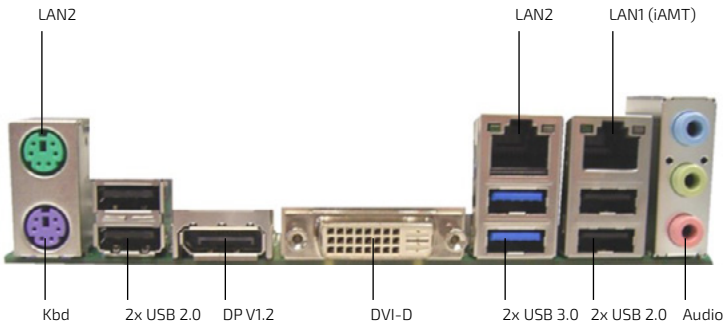
Industrial Series

The Kontron Motherboard D3445-S ATX of the Industrial Series is equipped with the cost-optimized Intel® H110 Express Chipset and supports the 6th Gen of Intel® Core™ Processors up to 65 W TDP.

It is a fully functional motherboard and particularly suitable for entry-level applications with lower performance demands.

PRODUCT HIGHLIGHTS

- ▶ Intel® HD Graphics; PCI Express® Gen3
- ▶ Multichannel Audio & Dual Intel GbE LAN onboard
- ▶ USB 2.0/3.0 onboard
- ▶ Trusted Platform Module V2.0 (Intel) onboard
- ▶ BIOS-POST/-Boot & OS – HW Watchdog onboard



TECHNICAL INFORMATION

SYSTEM	PROCESSOR	Intel® Core™ i7 / i5 / i3 – (6th generation) processor series Intel® Pentium® / Celeron® processor series Socket LGA1151, max. 65 W TDP
	CHIPSET	Intel® H110 Express Chipset
	MEMORY	2 DIMM Sockets DDR4, max. 32 GByte, Dual Channel, 2133 MHz (CL15), UDIMM, 1.2 V/2.5 V, 288-pin, non-ECC. Effective memory speed depends on installed processor
VIDEO	GRAPHICS	Intel® HD Graphics (depends on installed processor), DX12
AUDIO	AUDIO CODEC	Realtek ALC671
	AUDIO INTERFACE	5.1-channel, High Definition Audio Codec
NETWORK CONNECTION	ETHERNET	Intel i219LM & i210AT 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
PERIPHERAL CONNECTION	USB	4x USB 2.0 2x USB 3.0
	SERIAL PORT	1x RS232 (by header)
	PARALLEL PORT	1x (by header)
STORAGE & EXPANSION	SATA	4x SATA-III, NCQ, AHCI
	PCIe/PCI SLOTS	PCIe x16: 1x 16 Lanes, Gen3; 1x 1 Lane, Gen2 PCIe x8: 1x 1 Lane, Gen2 PCIe x4: 2x 1 Lane, Gen2 2x PCI
POWER	CONNECTOR	ATX Power Supply (24 pin + 4 pin)
FIRMWARE	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. BIOS integrated HW Diagnostic Tool 3 Level Watchdog (BIOS/BIOS Post/OS HW)
	WATCHDOG	Integrated
	REAL TIME CLOCK	Intel® integrated V2.0
	TPM	

► TECHNICAL INFORMATION

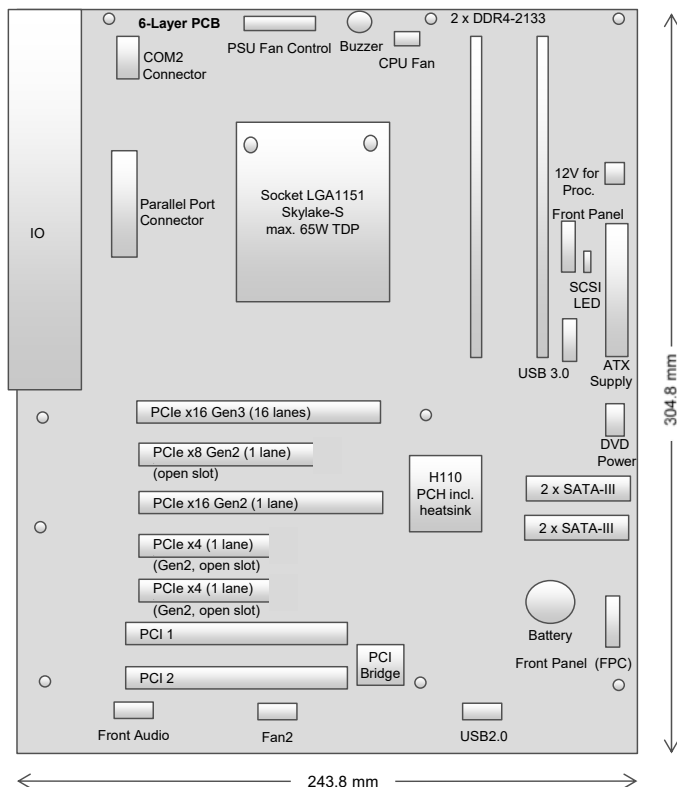
SYSTEM CONTROL	FP HEADER	1x Header for Reset button, HDD LED & External Speaker, Power button, Power LED Recovery BIOS, System and BIOS Password, Boot Sequence Control, Serial/USB- Port Access Protection, Boot Sector Virus Warning, Write Protection for Flash BIOS, EraseDisk (BIOS Feature), Intel® integrated TPM V2.0
	SECURITY	
SOFTWARE	OS SUPPORT	Windows 7-32, 64, Windows 10-64 MS Server 2008 R5, 2012 R2, 2016 Linux-32, 64
MECHANICAL	DIMENSIONS (L x W)	ATX: 12" x 9.6" (305 x 244 mm)
ENVIRONMENTAL	OPERATION TEMPERATURE	0 °C - 60 °C
CERTIFICATION	EMC & SAFETY	cTÜVus acc. IEC 62368, CE Class B

► POWER SUPPLY REQUIREMENTS

SOURCE	VOLTAGE	MIN. PS LOAD	MAX. VOLTAGE TOLERANCE	MOTHERBOARD CAPACITIVE LOAD	MOTHERBOARD MAX. CURRENT (continuous)
Main Power Supply	+ 12 V	0.05 A	± 5 %	5.000 µF	8 A / 12 A ¹⁾
	- 12 V	0 A	± 10 %	470 µF	0.3 A
	+ 5 V	0.2 A	± 5 %	3.000 µF	6.0 A
	+ 3.3 V	0 A	± 5 %	3.000 µF	0.5 A
Aux. Power	+ 5 Vaux	0 A	+ 5 % / - 3 %	3.000 µF	2.5 A

¹⁾ Max. Cont. Current = 8 A; max. Surge Current = 10 A (< 100 sec) / 12 A (< 10 ms)

► CONNECTOR / SOCKET DIAGRAM



► TECHNICAL INFORMATION

FEATURES	Board Size / Chipset VGA2* / DVI-I / DVI-D / DP V1.2 / 2nd DP V1.2 / LVDS Buzzer / int. Speaker Support / 5.1 Multichannel Audio Dual LAN Gbit / 100 Mbit / 10 Mbit / WoL / LAN Boot iAMT 11.0 vPro / Intel Standard Manageability / DASH V1.1 SATA / ATA / RAID / eSATA-Support / mSATA / M.2 SSD FireWire™ / USB 2.0 / USB 3.0 FAN monitored & controlled PSU** / CPU / AUX1 / AUX2 / AUX3 TEMP monitored CPU / onboard sensors / external sensor	ATX / iH110 - / - / + / + / - / - + / + / + + / + / + / + / + - / - / - + / - / - / + / - / - - / + / + + / + / + / - / - + / + / -
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 High Efficiency Core Voltage Regulator Design 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 (DDR4-2133) PCI Express® x16 (16 Lanes, Gen3) / x16 (1 Lane, Gen2) PCI Express® x8 (1 Lane Gen2) PCI Express® x4 (1 Lane Gen2) PCI Slots (32Bit, 33 MHz, Rev. 2.3) / Mini-PCI Express® SATA Express / SATA-600 / SATA-300 / mSATA / M.2 SSD S/PDIF (digital Audio) OUT / IN Frontpanel Audio (9-Pin, HD Audio & Legacy Audio AC97) 1 USB 2.0 channels / USB 3.0 channels / USB Stick (2.0) Serial (COM2, RS232) FAN PSU** / CPU / AUX1 / AUX2 / Aux3 SMBus (Case Temperature) / Intrusion (Case Open) Parallel Port Pin Connector*** ATX Power Supply (24 pin + 4 pin) / 12V-only Power Supply	2 1 / 1 1 2 2 / - - / 4 / - / - / - - / - 1 2 / 2 / - 1 1 / 1 / 1 / - / - - / - 1 + / -
EXTERNAL CONNECTORS	VGA Sub D* / DVI-I / DVI-D / DisplayPort V1.2 Audio Mic. In / Line in / Line out (or driver configuration) LAN (RJ-45) PS/2 Mouse / Keyboard USB 2.0 / USB 3.0 Serial (COM1, RS232) Parallel (EPP/ECP)***	- / - / 1 / 1 1 / 1 / 1 2 1 / 1 4 / 2 - -

*) VGA possible via optional converter board D3453 or DP-VGA-converter (dongle); In total, only two graphics outputs can be used
 **) Not supported by standard Power Supplies
 ***) External parallel port possible via optional connector cable
 Note: Intel limitation -> ECP-DMA-Mode no longer supported

► ORDERING INFORMATION

ARTICLE	PART NO.	DESCRIPTION
D3445-S ATX	F5110-V117	Intel® Core™ i7 / i5 / i3 – (6th generation) processor series, Intel® H110 Express Chipset
ACCESSORIES		
VGA CONVERTER BOARD	F5000-R8	D3453-A
SERIAL PORT CABLE	F5000-K5	400 mm, fullsize slot bracket
M.2 CARRIER BOARD	F5000-M1	D3352-A1

► Global Headquarters

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