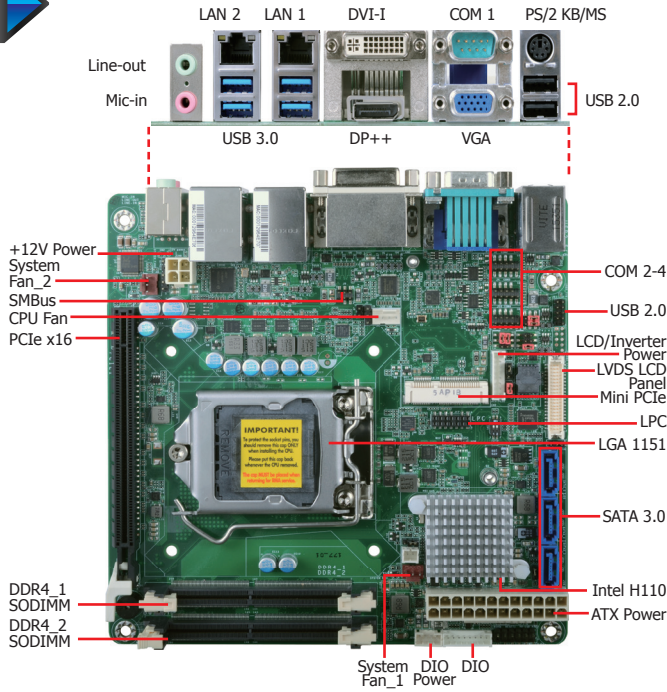


# SD100-H110

Desktop

H110

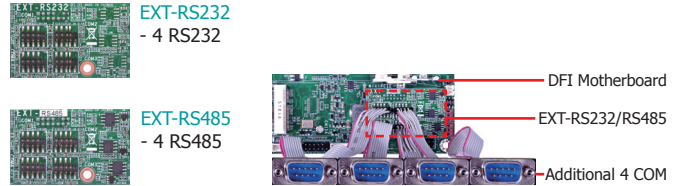


## Features

- 2 DDR4 SODIMM up to 32GB
- Four display ports support two independent displays: VGA + LVDS + DVI-I + DP++
- DP++ resolution up to 4096x2304 @ 60Hz  
Dual Channel LVDS resolution up to 1920x1200 @ 60Hz
- Multiple expansion: 1 PCIe x16, 1 Mini PCIe
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.0, 4 USB 2.0
- LPC EXT-RS232/485 module extends additional 4 COM ports



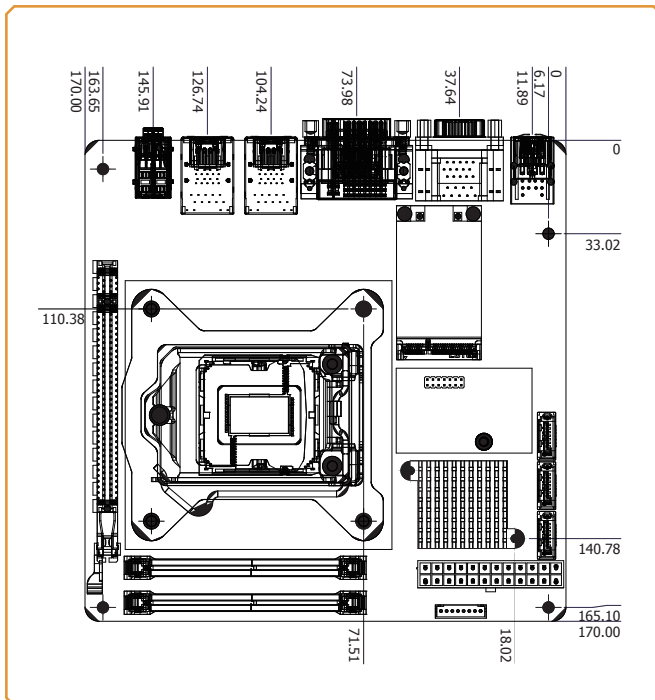
## 2 Extension Modules for Additional 4 COM Ports (via the LPC connector)



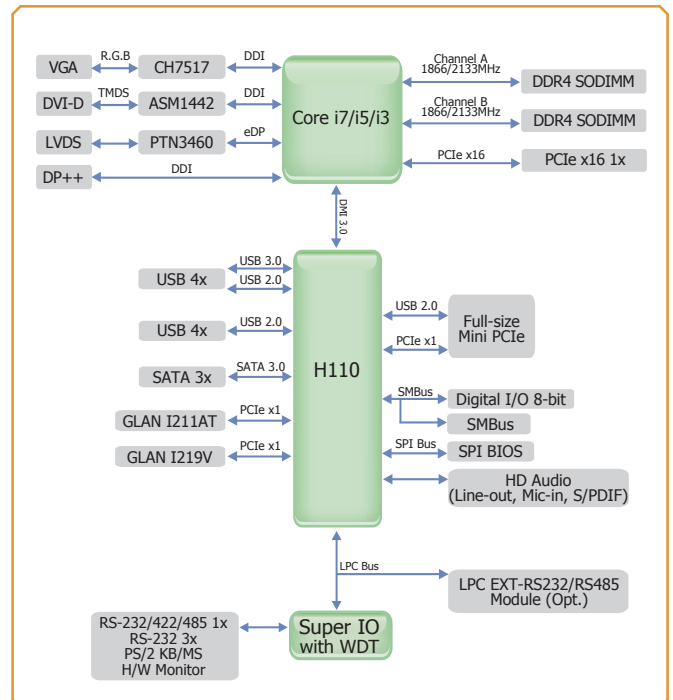
## Ordering Information

Model Name	P/N	Memory	GbE	RS-232/422/485	RS-232	USB 3.0	USB 2.0	Power	Thermal	Temp.
SD100-H110N	770-SD1001-100G	2 SODIMM	2	1	3	4	4	24-pin ATX	Active	0 to 60°C

## Mechanical Drawing



## Block Diagram



## Specifications

<b>SYSTEM</b>	<b>Processor</b>	7th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-7700 Processor, Quad Core, 8M Cache, 3.6GHz (4.2GHz), 65W Intel® Core™ i5-7500 Processor, Quad Core, 6M Cache, 3.4GHz (3.8GHz), 65W Intel® Core™ i3-7101E Processor, Dual Core, 3M Cache, 3.9GHz, 65W 6th Generation Intel® Core™ Processors, LGA 1151 Socket Intel® Core™ i7-6700, Quad Core, 8M Cache, 3.4GHz (4.0GHz), 65W Intel® Core™ i7-6700TE, Quad Core, 8M Cache, 2.4GHz (3.4GHz), 35W Intel® Core™ i5-6500, Quad Core, 6M Cache, 3.2GHz (3.6GHz), 65W Intel® Core™ i5-6500TE, Quad Core, 6M Cache, 2.3GHz (3.3GHz), 35W Intel® Core™ i3-6100, Dual Core, 3M Cache, 3.7GHz, 47W Intel® Core™ i3-6100TE, Dual Core, 4M Cache, 2.7GHz, 35W Intel® Pentium® G4400, Dual Core, 3M Cache, 3.3GHz, 47W Intel® Pentium® G4400TE, Dual Core, 3M Cache, 2.4GHz, 35W Intel® Celeron® Processor G3900, Dual Core, 2M Cache, 2.8GHz, 65W Intel® Celeron® Processor G3900TE, Dual Core, 2M Cache, 2.6GHz, 35W		
	<b>Chipset</b>	Intel® H110		
	<b>Memory</b>	Two 260-pin SODIMM up to 32GB	Dual Channel DDR4 1866/2133MHz	
	<b>BIOS</b>	Insyde SPI 128Mbit		
	<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Gen 9 Graphics	
<b>GRAPHICS</b>	<b>Feature</b>	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9		
	<b>Display</b>	1 x VGA 1 x LVDS 1 x DVI-I (DVI-D signal) 1 x DP++	VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel, resolution up to 1920x1200 @ 60Hz DVI-I: resolution up to 1920x1200 @ 60Hz DP: resolution up to 4096x2304 @ 60Hz	
	<b>Dual Displays</b>	VGA + LVDS VGA + DP++	LVDS + DVI-I (DVI-D signal) LVDS + DP++	
	<b>EXPANSION</b>	<b>Interface</b>	1 x PCIe x16 (Gen 3) 1 x Full-size Mini PCIe	
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC888S-VD2-GR		
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® I211AT PCIe (10/100/1000Mbps)	1 x Intel® I219V PCIe (10/100/1000Mbps)	
<b>REAR I/O</b>	<b>Ethernet</b>	2 x GbE (RJ-45)		
	<b>Serial</b>	1 x RS-232 (DB-9)		
	<b>USB</b>	4 x USB 3.0	2 x USB 2.0	
	<b>PS/2</b>	1 x PS/2 (mini-DIN-6)		
	<b>Display</b>	1 x VGA 1 x DVI-I (DVI-D signal) 1 x DP++		
	<b>Audio</b>	1 x Line-in (available upon request) 1 x Line-out 1 x Mic-in		
	<b>INTERNAL I/O</b>	<b>Serial</b>	1 x RS-232/422/485 (RS-232 w/ power) (2.00mm pitch) 2 x RS-232 (2.00mm pitch)	
<b>INTERNAL I/O</b>	<b>USB</b>	2 x USB 2.0 (2.00mm pitch)		
	<b>Display</b>	1 x LVDS LCD Panel Connector	1 x LCD/Inverter Power	
	<b>Audio</b>	1 x S/PDIF		
	<b>SATA</b>	3 x SATA 3.0 (up to 6Gb/s)		
	<b>DIO</b>	1 x 8-bit DIO		
	<b>LPC</b>	1 x LPC (supports LPC EXT-RS232/RS485 module)		
	<b>SMBus</b>	1 x SMBus		
	<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds	
	<b>POWER</b>	<b>Type</b>	ATX	
<b>Connector</b>		4-pin ATX 12V power	24-pin ATX power	
<b>Consumption</b>		Typical: i7 65W: 12V @ 1.32A (15.89Watt) Max.: i7 65W: 12V @ 7.73A (92.76Watt)		
<b>RTC Battery</b>		CR2032 Coin Cell		
<b>OS SUPPORT</b>	<b>Microsoft/Linux</b>	Windows 7 (/WES7) 32/64-bit Windows 8.1 (64-bit) Windows 10 IoT Enterprise 64-bit Note: 7th Gen Intel Core processors only support Win 10.	Debian 8 (with VESA graphic driver) CentOS 7 (with VESA graphic driver) Ubuntu 15.10 (Intel graphic driver available)	
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C	Storage: -40 to 85°C	
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH	
	<b>MTBF</b>	434,223 hrs @ 25°C; 251,029 hrs @ 45°C ; 157,975 hrs @ 60°C Calculation model: Telcordia Issue 2, Method I Case 3 Environment: GB, GC – Ground Benign, Controlled		
<b>MECHANICAL</b>	<b>Dimensions</b>	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")	
	<b>Height</b>	PCB: 1.6mm	Top Side: 20mm, Bottom Side: 3mm	
<b>CERTIFICATIONS</b>	CE, FCC Class B, RoHS, UL			

## Packing List

• 1 SD100-H110 motherboard	
• 1 COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• 1 Serial ATA data cable (Length: 500mm)	332-553001-005G
• 1 I/O shield	A49-SD3300-001G
• 1 DVD	

## Optional Items

• USB port cable (Length: 200mm)	A81-001032-016G
• COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• Serial ATA data cable (Length: 500mm)	332-553001-005G
• Thermal solution (For 35W, Height: 37.3mm)	A71-103004-000G
• Thermal solution (For 65W, Height: 72.8mm)	552-200049-000G
• LPC EXT-RS232 module (4 x RS232 ports)	770-EXTRS1-000G
• LPC EXT-RS485 module (4 x RS485 ports)	770-EXTRS1-100G
• DT122 Chassis	761-DT1220-200G