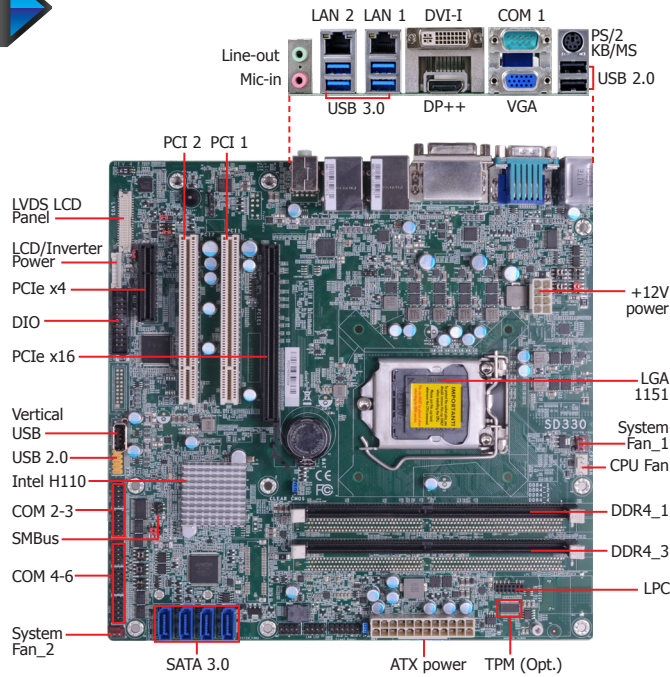


# H110

Desktop

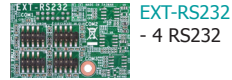


## Features

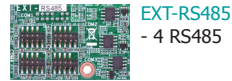
- 2 DDR4 DIMM up to 32GB
- Four display ports: VGA, LVDS, DVI-I, DP++ Supports two independent displays
- DP++ resolution up to 4096x2160 @ 60Hz Dual Channel LVDS resolution up to 1920x1200 @ 60Hz
- Multiple expansion: 1 PCIe x16, 1 PCIe x4, 2 PCI, 1 LPC
- Rich I/O: 2 Intel GbE, 6 COM, 4 USB 3.0, 5 USB 2.0
- LPC EXT-RS232/485 module supports 4 COM ports



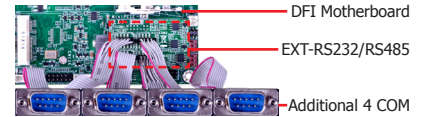
## 2 Extension Modules for Additional 4 COM Ports (via the LPC connector)



EXT-RS232  
- 4 RS232

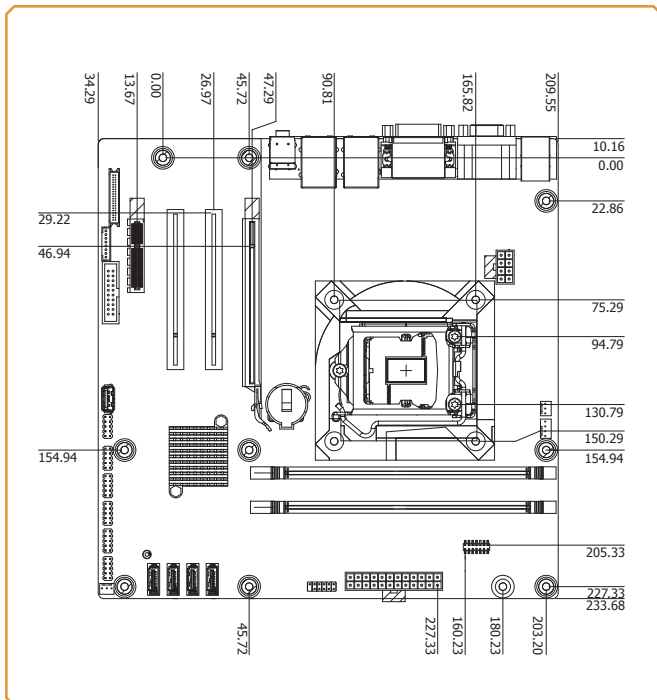


EXT-RS485  
- 4 RS485

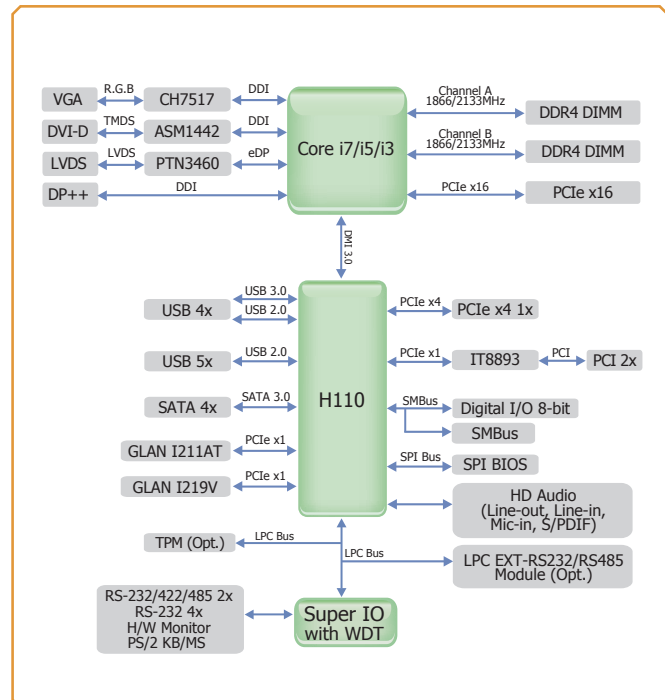


DFI Motherboard  
EXT-RS232/RS485  
Additional 4 COM

## Mechanical Drawing



## Block Diagram



## Specifications

<b>SYSTEM</b>	<b>Processor</b>	6th/7th Generation Intel® Core™ /Pentium®/Celeron® LGA 1151 Socket Processors with TDP up to 65W	
	<b>Chipset</b>	Intel® H110 Chipset	
	<b>Memory</b>	Two 288-pin DIMM 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>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 4096x2160 @ 60Hz
	<b>Dual Displays</b>	VGA + LVDS VGA + DVI-I (DVI-D signal) VGA + DP++	LVDS + DVI-I (DVI-D signal) LVDS + DP++ DVI-I (DVI-D signal) + DP++
<b>EXPANSION</b>	<b>Interface</b>	1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 2)	2 x PCI
<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>USB</b>	4 x USB 3.0	2 x USB 2.0
	<b>Serial</b>	1 x RS-232/422/485 (RS-232 w/ power) (DB-9)	
	<b>PS/2</b>	1 x PS/2 (mini-DIN-6)	
	<b>Display</b>	1 x VGA 1 x DP++	1 x DVI-I (DVI-D signal)
	<b>Audio</b>	1 x Line-out	1 x Mic-in 1 x Line-in (opt., MOQ required)
<b>INTERNAL I/O</b>	<b>Serial</b>	1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)	
	<b>USB</b>	2 x USB 2.0 (2.54mm pitch)	1 x Vertical USB 2.0 (type A)
	<b>Audio</b>	1 x Audio (Line-out/Mic-in) (opt., MOQ required)	1 x S/PDIF
	<b>SATA</b>	4 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>SECURITY</b>	<b>TPM</b>	Infineon TPM2.0/1.2 (opt., MOQ required)	
<b>POWER</b>	<b>Type</b>	ATX	
	<b>Connector</b>	8-pin ATX 12V power	24-pin ATX power
	<b>Consumption</b>	TBD	
	<b>RTC Battery</b>	CR2032 Coin Cell	
<b>OS SUPPORT</b>		Windows 7 32/64-bit Window 8.1 64-bit Windows 10 64-bit Ubuntu 16.04 Note: 7th Gen CPU SKU ONLY support Windows 10 64-bit & Ubuntu 16.04.	
<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>	365,364 hrs @ 25°C; 207,523 hrs @ 45°C; 131,395 hrs @ 60°C Calculation Model: Telcordia Issue 2, Method Case 3 Environment: GB, GC – Ground Benign, Controlled	
<b>MECHANICAL</b>	<b>Dimensions</b>	microATX form factor	244mm (9.6") x 244mm (9.6")
	<b>Height</b>	PCB: TBD	Top Side: TBD, Bottom Side: TBD
<b>CERTIFICATIONS</b>		CE, FCC Class B, RoHS, UL	