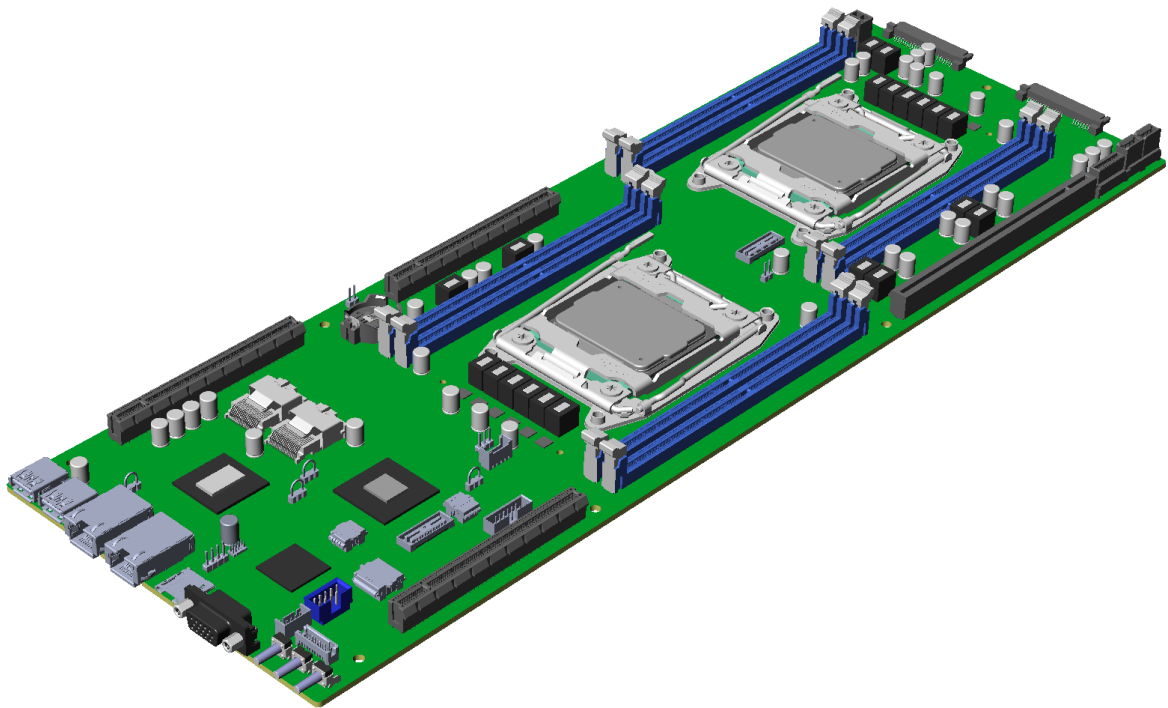


# T-Platforms

## V210 Series Mainboard

### Specification

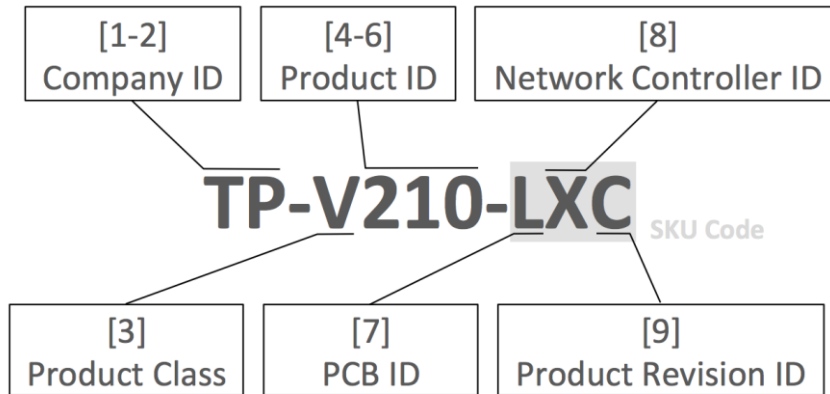


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# 1 Mainboard SKUs

The mainboard is shipping in various SKUs. Each mainboard SKU has its own part number which includes specific SKU code shown below:



Where:

- [7] – PCB Material Identifier.
- [8] – Network Controller identifier:
  - X : Intel X540 10 Gigabit Ethernet Controller;
  - I : Intel I350 Gigabit Ethernet Controller;
- [9] – Hardware Revision, alphabetical sequence.

## 2 Specification

Brief specification of the mainboard is presented in Table 1.

Table 1. System Board Specification

Component	Description
Processor	<ul style="list-style-type: none"> <li>– Two Socket 2011-3 with Narrow ILM.</li> <li>– Support for Intel® Xeon E5-2600 v3 processors codenamed "Haswell-EP"</li> <li>– Dual QPI 9,6GT/s links across CPUs</li> </ul>
Memory	<ul style="list-style-type: none"> <li>– 8 DIMM per board / 4 DIMM per CPU</li> <li>– Up to DDR4 2133MHz speed</li> <li>– DDR4 1.2V</li> <li>– RDIMM / LRDIMM support</li> <li>– Up to 512 GB total capacity</li> </ul>
Onboard I/O Devices and Ports	<ul style="list-style-type: none"> <li>– CPU-integrated PCI Express Gen3 controllers</li> <li>– Intel® C612 Chipset</li> <li>– ASPEED AST2400 Baseboard Management Controller</li> <li>– Two external USB 3.0 ports</li> <li>– Two internal USB 2.0 ports</li> <li>– One external microSD card slot</li> <li>– One internal Serial Port header</li> <li>– One external analog VGA connector</li> </ul>
Networking	<ul style="list-style-type: none"> <li>– Onboard Intel® X540 10Gb Ethernet dual-port controller or Intel® I350 1Gb Ethernet dual-port controller</li> <li>– Two external 10GBASE-T / 1000BASE-T ports</li> </ul>
Local Storage	<ul style="list-style-type: none"> <li>– Two direct attached 2.5" drives on 6Gb/s SATA AHCI</li> <li>– Eight ports 6Gb/s SATA AHCI in two Mini-SAS SFF-8087 connectors</li> </ul>
Video	<ul style="list-style-type: none"> <li>– BMC-integrated 2D display controller</li> <li>– Up to 1920 x 1200 resolution</li> </ul>
Expansion Slots	<ul style="list-style-type: none"> <li>– Three standard PCI Express Gen3 x16 (signals) slots</li> <li>– One proprietary PCI Express Gen3 x24 (signals) slot</li> </ul>
Hardware Monitoring	<ul style="list-style-type: none"> <li>– Onboard component voltage monitoring, 16 sensors</li> <li>– Onboard component current monitoring, 6 sensors</li> </ul>

	<ul style="list-style-type: none"> <li>– Onboard thermal monitoring voltage monitoring, 18 sensors</li> </ul>
Error Logging and Reporting	<ul style="list-style-type: none"> <li>– PCI Express error logging</li> <li>– QPI error logging</li> <li>– Memory error logging</li> <li>– Voltage / Current / Temperature sensor threshold exceeding logging</li> <li>– User configurable error reporting</li> </ul>
Power Delivery	<ul style="list-style-type: none"> <li>– Proprietary Backplane interfaces</li> <li>– Main power rail 12V</li> <li>– Stand By power rail 5V</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>– Narrow Socket 2011 CPU Heatsinks</li> <li>– Passive heatsinks on Chipset / NIC and CPU Voltage Regulators</li> <li>– Fan Speed Controller, 1 PWM / 4 Tacho</li> <li>– Up to 4 fans per board</li> </ul>
Miscellaneous	<ul style="list-style-type: none"> <li>– Power, Reset and ID buttons on board I/O panel</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>– 165 x 476 mm</li> </ul>

## 2.1 Mainboard Functional Diagram

The functional diagram of the mainboard is shown below on Figure 1.

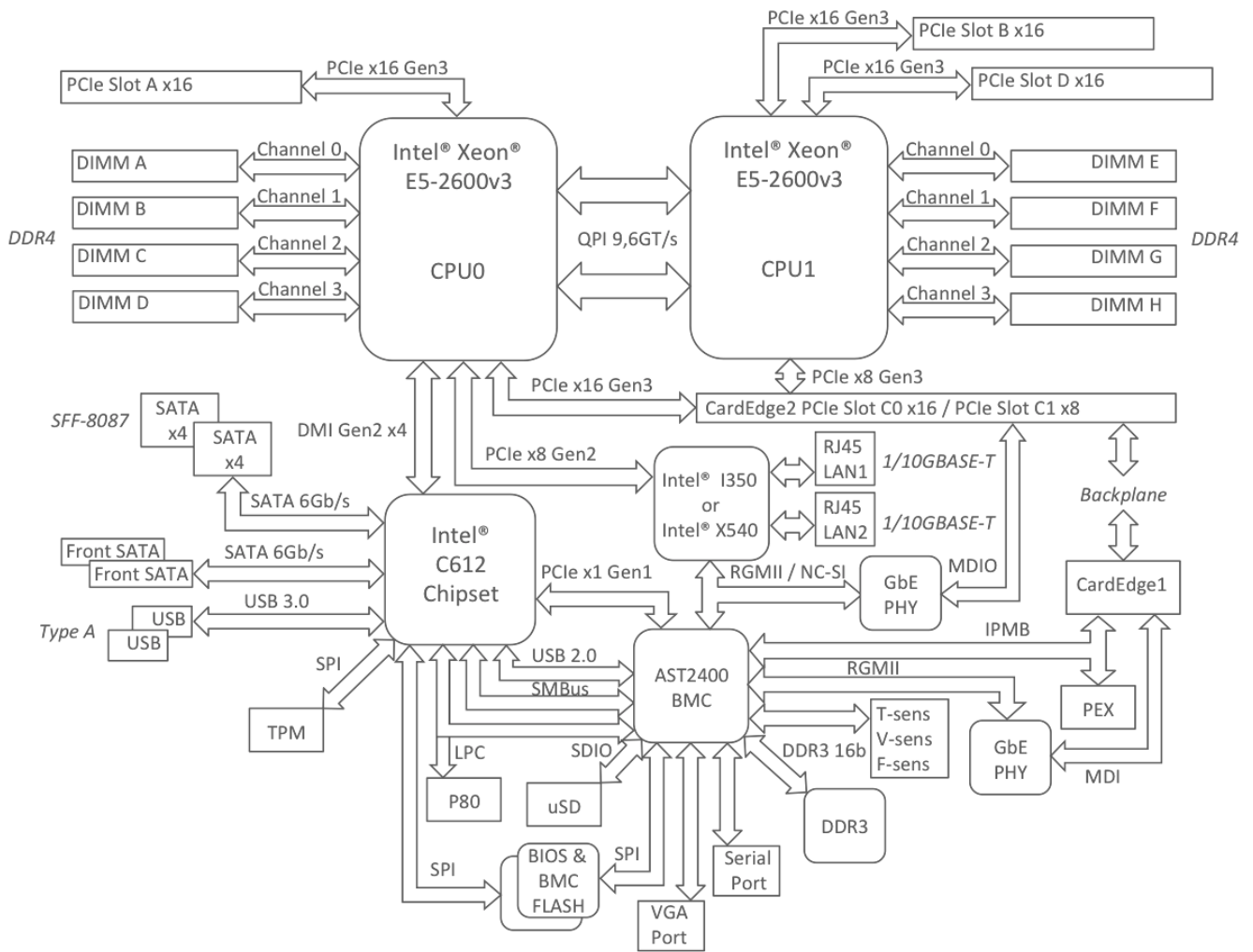


Figure 1. Mainboard functional diagram.

## 2.2 Mainboard Details

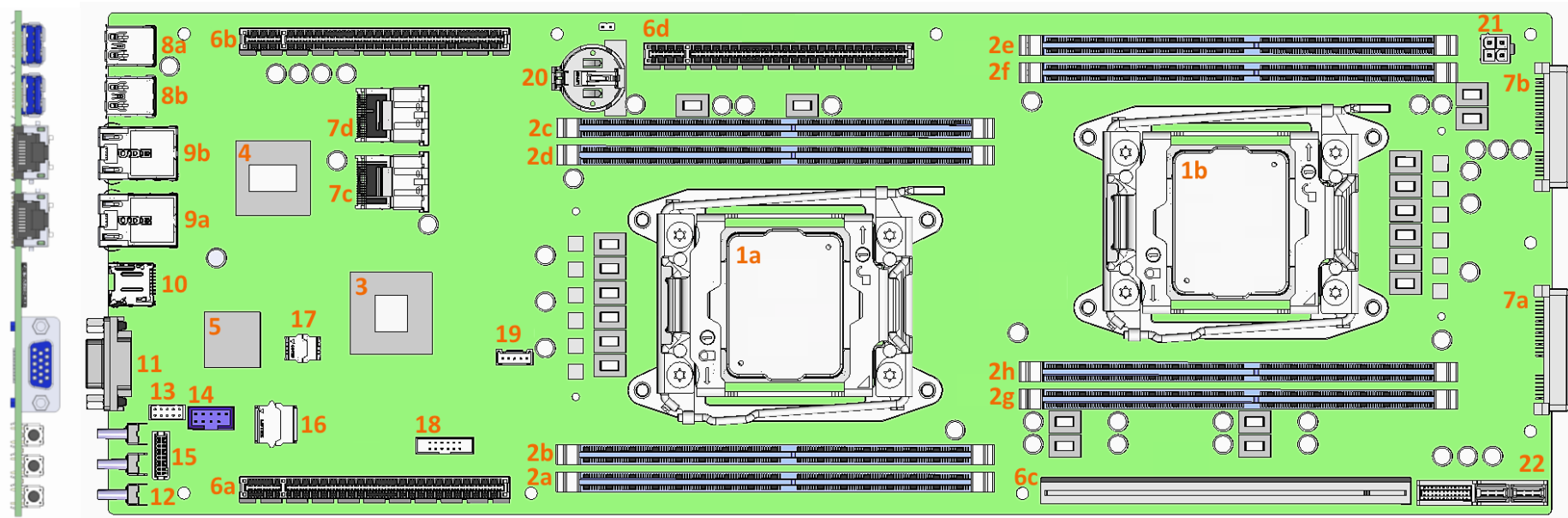


Figure 2

1a CPU Socket 1; 1b CPU Socket 2

2a DIMM Slot A; 2b DIMM Slot B; 2c DIMM Slot C; 2d DIMM Slot D;  
2e DIMM Slot E; 2f DIMM Slot F; 2g DIMM Slot G; 2h DIMM Slot H

3 Intel® C612 Chipset Intel®

4 Onboard Network Controller Intel® X540 / Intel® I350

5 Baseboard Management Controller ASPEED AST2400

6a PCIe Slot A; 6b PCIe Slot B; 6c PCIe Slot C; 6d PCIe Slot

7a Front SATA 1; 7b Front SATA 2; 7c Mini-SAS 1; 7d Mini-SAS 2

8a USB 3.0 Port 1; 8b USB 3.0 Port 2

9a NIC Port 1; 9b NIC Port 2

10 microSD Card Slot

11 Analog VGA DB15H Connector

12 Local Controls and LEDs

13 Serial Port Header

14 2-Port USB 2.0 header

15 TPM 2.0 Header

16 BMC SPI Flash Socket

17 BIOS SPI Flash Socket

18 LPC Header

19 SMBus Header

20 CR2032 battery in holder

21 Auxiliary Power Connector

22 CardEdge backplane interface Connector

## Appendix A. Intel® Xeon® Processor E5 v3 Family

The mainboard is supporting dual Intel® Xeon 2600 v3 Family processors codenamed “Haswell-EP”. Here is the list of compatible processors:

- Intel® Xeon® Processor **E5-2603 v3** (15M Cache, 1.60 GHz), TDP 85W.
- Intel® Xeon® Processor **E5-2609 v3** (15M Cache, 1.90 GHz), TDP 85W.
- Intel® Xeon® Processor **E5-2620 v3** (15M Cache, 2.40 GHz), TDP 85W.
- Intel® Xeon® Processor **E5-2623 v3** (10M Cache, 3.00 GHz), TDP 105W.
- Intel® Xeon® Processor **E5-2630 v3** (20M Cache, 2.40 GHz), TDP 85W.
- Intel® Xeon® Processor **E5-2630L v3** (20M Cache, 1.80 GHz), TDP 55W.
- Intel® Xeon® Processor **E5-2637 v3** (15M Cache, 3.50 GHz), TDP 135W.
- Intel® Xeon® Processor **E5-2640 v3** (20M Cache, 2.60 GHz), TDP 90W.
- Intel® Xeon® Processor **E5-2643 v3** (20M Cache, 3.40 GHz), TDP 135W.
- Intel® Xeon® Processor **E5-2650 v3** (25M Cache, 2.30 GHz), TDP 105W.
- Intel® Xeon® Processor **E5-2650L v3** (30M Cache, 1.80 GHz), TDP 65W.
- Intel® Xeon® Processor **E5-2660 v3** (25M Cache, 2.60 GHz), TDP 105W.
- Intel® Xeon® Processor **E5-2667 v3** (20M Cache, 3.20 GHz), TDP 135W.
- Intel® Xeon® Processor **E5-2670 v3** (30M Cache, 2.30 GHz), TDP 120W.
- Intel® Xeon® Processor **E5-2680 v3** (30M Cache, 2.50 GHz), TDP 120W.
- Intel® Xeon® Processor **E5-2683 v3** (35M Cache, 2.00 GHz), TDP 120W.
- Intel® Xeon® Processor **E5-2690 v3** (30M Cache, 2.60 GHz), TDP 135W.
- Intel® Xeon® Processor **E5-2695 v3** (35M Cache, 2.30 GHz), TDP 120W.
- Intel® Xeon® Processor **E5-2697 v3** (35M Cache, 2.60 GHz), TDP 145W.
- Intel® Xeon® Processor **E5-2698 v3** (40M Cache, 2.30 GHz), TDP 135W.
- Intel® Xeon® Processor **E5-2699 v3** (45M Cache, 2.30 GHz), TDP 145W.