# » CG2200 Carrier Grade Server «

## Dual Intel® Xeon® 10-Core Processor E5-2600 v2 Family

» Dual 10 Cores with Hyperthreading (40 threads total)
» 16 slot, 4 channel support of DDR3 RDIMM/UDIMM; supports 256GB maximum (with 16GB DIMM);
» Optimized for PCI-E IO card implementation with 2 PCI-E riser (4 FL/FH cards) and 2 LP card support
» Hot-Swap 2.5" SAS/SATA HDDs
» Front panel: 1 serial, 1 USB 2.0;
Rear panel: 1 serial, 4 USB 2.0, 1 management NIC port
» Quad rear GbE NIC ports (standard)

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**Product Overview**

With a long and proven history dedicated to designing 'long-life' carrier grade communication servers, Kontron also introduces the NEBS-3 compliant communication rack mount server, CG2200.

Featuring a 'dual-socket' approach with the 8-core Intel Xeon Processors E5-2600 Family, this Kontron server combines high memory, flexible I/O and storage options, and dual redundant AC or DC power options into a compact 2U, 20-inch deep form factor.

**Benefits of Designing With Dual 8-Core Intel Xeon Processor E5-2600 Series Family**

The 22nm Intel Xeon Processor E5 family introduces a multitude of enhancements intended to significantly improve processor performance over previous generations, plus lower latency and intelligently save power. It is the first dual-socket server-class Intel processor to integrate PCI Express 3.0, thus enabling the I/O hub to be removed to save blade- or boardlevel real estate. The Intel Xeon Processor E5-2600 v2 family features exemplary performance and a maximized feature set, ideal for telecom and network equipment manufacturers (TEMs/NEPs) planning to go to market with high-bandwidth infrastructure used in carrier cloud computing and 4G LTE EPC networks.

The Kontron CG2200 benefits from the following Intel advancements:

» Massive I/O bandwidth increase: a total of 80 lanes of PCIe (40 lanes per processor);
» Faster memory bandwidth: each processor has 4 channels running up to 1600MHz, a 60% increase over previous Intel Xeon Processor 5600 Series;
» Large inter-processor connection: reduced latency with two 8GT/s QPI, which accelerates access a processor needs to access resources (PCIe and/or memory) attached to second processor;
» More cores, similar power budget: supports for up to 10 cores (20 threads) with the same power budget that allowed only up to 8 cores previously; dual-socket supplies 20 cores (40 threads)

## Features & Benefits

| Standard Features | Benefits |
|---|---|
| Dual socket support for Intel® Xeon® Processor E5-2600 v2 Family | 22nm process technology for 20cores/40 threads available per system, enable significant performance improvement for multi-threaded applications. 80 PCIe Gen 3 lanes. |
| Three-to-five year lifecycle support | Reduced customer risk with fewer platform transitions and greater lifecycle stability. |
| Shallow 20-inch depth | Increases installation and service flexibility. Meets typical depth needed for most central office installations. |
| 650W AC or DC hot-swap, redundant power supplies with PMBus support | Flexibility of either AC or DC power installation. Power supply unit supports high 80 plus efficiency and PMBus power management. |
| Telco alarm management | Telco alarm LEDs on front panel. Relay connector on rear panel supports central office alarm systems. |
| Hot-swap, redundant fans | Greater uptime and improved serviceability. |
| Four rear-panel GbE NIC (Cu) ports | Four on-board NIC ports are standard. |
| Sixteen RDIMM/UDIMM memory slots (DDR3-1066/1333/1600 MT/s) | Supports four channel per processor and two slots per channel. Integrated memory controller in CPU enables higher performance at lower power. |
| Drive trays for up to six hot-swap 2.5-inch SAS hard disk drives | Choice of SAS drives. Improved serviceability with hot-swap drives.<br>Large number of drives enables a variety of SW and HW RAID options.<br>Improved drive reliability due to proprietary rotational vibration suppression technology.<br>SATA Solid State Drives supported. |
| Customizable front bezel | Adaptable to customer needs and environment. |
| **Optional Features** | **Benefits** |
| Integrated Hardware RAID with Flash Backup and SuperCap technology | Supports RAID levels 0, 1, 5, and 6 providing greater protection, reliability, and performance. |
| Remote Management | Lights-out management via optional Intel® Remote Management Module 4 (RMM4) Dedicated Management NIC.<br>Improved integration over previous versions. |
| Flash Memory Support | Choice of multiple flash memory options are available:<br>» Internal bootable USB flash device<br>» Two (2) front accessible SD flash media devices<br>» SATA solid state drives |
| Up to Six PCI slots for flexibility and additional I/O | Faster performance with PCI-E Gen3/Gen 2. Two low-profile PCI-E slots (one internal without rear I/O accessibility);<br>Choice of risers to support either: (1) Four PCI-E x 8slots; (2) Two PCI-E x16 slots; (3) Two PCI-E x8 or one PCI-E x16 and two PCI-x slots. |

## Technical Information

| | |
|---|---|
| **Processor** | |
| Type | Dual 10-Core Intel® Xeon® Processor E5-2600 v2 Family |
| Chipset | Intel® C600 Chipset |
| **Connections** | |
| PCI adapter slot support | Two low-profile slots and one without rear I/O accessibility; The following riser card options are supported: Right side: one slot x16 PCI-E riser; two slots x8 PCI-E riser; or two slots PCI-X riser; and Left side: one slot x16 PCI-E riser; or two slots x8 PCI-E riser |
| Serial ports | RJ-45 serial connector in front and one DB-9 connector in rear |
| Video port | One DB-15 video connector (rear) |
| USB 2.0 ports | Five (5): one front / four rear |
| Management ports | One RJ-45 connector to support optional Intel® Remote Management NIC |
| **Storage** | |
| Type | Up to six 2.5-inch hot-swap SAS hard drive |
| Redundancy | Software RAID 0, 1 and 5 and optional Hardware RAID 0, 1, 5 and 6 |
| Internal | Carrier with six HDD trays |
| SD Flash Storage | Two (2) front accessible Secure Data flash media devices are supported |
| **Memory** | |
| Type | DDR3 technology at 1066/1333/1600 MT/s |
| DIMM slots | Sixteen (16) RDIMM or UDIMM slots |
| Capacity | 256GB (non-mirrored mode with 16GB DIMMs) |
| **Physical** | |
| Height x Width x Depth port | 3.45 inches (87.6 mm) x 17.14 inches (435.3 mm) x 20 inches (508 mm) |
| **Environmental** | |
| Temperature, operating | 5°C to 40°C (41° F to 104° F) |
| Temperature, non-operating | -40°C to 70°C (-40° F to 158° F) |
| Humidity, non-operating | 95%, non-condensing at temperatures of 23° C (73° F) to 40° C (104° F) |
| Altitude | 0 to 1,800 m (0 to 5,905 ft) @ 40° C; 0 to 4,000 m (0 to 13,123 ft) @ 30° C |
| Vibration, non-operating | 5 Hz @ 0.001g2/Hz to 20Hz @ 0.01g2/Hz (slope up)*; 20 Hz to 500Hz @ 0.01g2/Hz (flat)*; Input acceleration is 2.20g RMS*; 10 min per axis in all 3 axes on all samples*; Random control limit tolerance in +/- 3dB* |
| Shock, operating | Half-sine 2 G, 11 ms pulse, 100 pulses in each direction, on each of the three axes** |
| Shock, non-operating | Trapezoidal, 25 G, 205 inches/sec delta V, two drops in per face, (total 12 drops) ** |
| Electrostatic discharge (ESD) | Tested ESD levels up to 12kV (kilovolts) air discharge and up to 8kV contact discharge without physical damage** |
| Acoustic | Sound power: 7B max at ambient temperatures < 23 +/-2°C** |
| RoHS | Complies with RoHS Directive 2002/95/EC<br>* per Intel®'s 25-GS0009 Boards and Systems Environmental Standards Governing Spec;<br>** per the K00158 CRMS Environmental Standards Specification |
| **Safety Compliance** | |
| USA/Canada | UL 60950-1, 2nd Edition/CSA 22.2 No. 60950-1 2nd Edition |
| Europe | Nemko/GS EN 60950-1, 2nd Edition; Low Voltage Directive, 2006/95/EC |
| International | CB Certificate and Report to IEC60950-1, 2nd Edition and all international deviations |
| **Electromagnetic Compatibility** | |
| Australia/New Zealand | EN55022, Class A Limit |
| Canada | IC ICES-003 Class A Limit |
| Europe | EMC Directive, 2004/108/EC; EN55022, Class A Limit, Radiated & Conducted Emissions; EN55024 Immunity Characteristics for ITE; EN61000-4-2 ESD Immunity; EN61000-4-3 Radiated Immunity; EN61000-4-4 Electrical Fast Transient; EN61000-4-5 Surge; EN61000-4-6 Conducted RF; EN61000-4-8 Power Frequency Magnetic Fields; EN61000-4-11 Voltage Fluctuations and Short Interrupts; EN61000-3-2 Harmonic Currents; EN61000-3-3 Voltage Flicker |
| International | CISPR 22, Class A Limit, CISPR 24 Immunity |
| Japan | VCCI Class A ITE (CISPR 22, Class A Limit) |
| Korea | KCC Approval, Class A |
| Russia | Gost Approval (EMC and safety) |
| Taiwan | BSMI Approval, CNS 13438, Class A and CNS 14336 Safety |
| USA | FCC 47 CFR Parts 15, Verified Class A Limit |

**Leading performance and energy efficiency in a rugged, carrier-grade design**

The CG2200 Carrier Grade Server combines performance, ruggedness, reliability, and long life in a NEBS-3 and ETSI-compliant 2U chassis.

This high-performing, rugged server is an excellent choice for the demanding environment and limited space of the Telco central office, as well as for network data centers. It enables OEMs and TEMs to create specialized, value-added solutions for a variety of telecom applications including unified messaging, SoIP, call control, streaming media and signaling gateways, and operational system support. In addition, the CG2200 is ideal for other types of rugged applications, such as in the Military and Medical segments, where meeting tough environmental requirements is critical.

The CG2200 has been designed to withstand extreme heat, humidity, altitude and zone 4 earthquake shock and multiple other extreme environmental conditions in compliance with NEBS-3/ETSI requirements. Also important for the rigid requirements of the telecom central office, the server includes advanced server management and telco alarm management features that provide visual, audible (optional) and SNMP event indications of faults.

**Maintaining High Performance and Reliability: Innovative Vibration Suppression Technology**

Kontron has integrated innovative vibration suppression technologies into its communication rack mount servers which benefit customers by allowing denser systems to operate at higher temperatures, thus, enabling the customer to deploy their solutions in environments not previously possible.

In addition, they benefit from being able to use a greater variety of hard disk types and sizes instead of being limited to a few “extra rugged” devices.

The proprietary vibration suppression technologies in Kontron’s communication rack mount servers are designed to significantly reduce the amount of vibration by isolating both vibration-generating devices and vibration-sensitive devices.

The company’s 1U and 2U Carrier Grade and IP Network servers utilize a unique vibration-absorbing material allowing its designers to isolate both the fans and hard drives from direct contact with the system’s metal infrastructure so they literally “float” inside the chassis.

This approach requires that the initial system design includes vibration suppression as a key requirement.

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