

## » CG2200 Carrier Grade Server «



### Dual Intel® Xeon® 8-Core Processor E5-2600 Family

- » Dual 8 Cores with Hyperthreading (32 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)

# CG2200 Carrier Grade Server

## 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 32nm 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 board-level real estate.

Kontron selected the Intel Xeon Processor E5-2600 family simply because of its exemplary performance and 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: Kontron supports up to 8 cores (16 threads) with the same power budget that allowed only 4 to 6 cores previously; dual-socket supplies 16 cores (32 threads)

## Features & Benefits

### Standard Features

Dual socket support for Intel® Xeon® Processor E5-2600 Family

Three-to-five year lifecycle support

Shallow 20-inch depth

650W AC or DC hot-swap, redundant power supplies with PMBus support

Telco alarm management

Hot-swap, redundant fans

Four rear-panel GbE NIC (Cu) ports

Sixteen RDIMM/UDIMM memory slots (DDR3-1066/1333/1600 MT/s)

Drive trays for up to six hot-swap 2.5-inch SAS hard disk drives

Customizable front bezel

### Benefits

32nm process technology a new micro-architecture and 16 cores/32 threads available per system enable significant performance improvement for multi-threaded applications. 80 PCIe Gen 3 lanes.

Reduced customer risk with fewer platform transitions and greater lifecycle stability.

Increases installation and service flexibility. Meets typical depth needed for most central office installations.

Flexibility of either AC or DC power installation. Power supply unit supports high 80 plus efficiency and PMBus power management.

Telco alarm LEDs on front panel. Relay connector on rear panel supports central office alarm systems.

Greater uptime and improved serviceability.

Four on-board NIC ports are standard.

Supports four channel per processor and two slots per channel. Integrated memory controller in CPU enables higher performance at lower power.

Choice of SAS drives. Improved serviceability with hot-swap drives. Large number of drives enables a variety of SW and HW RAID options. Improved drive reliability due to proprietary rotational vibration suppression technology. SATA Solid State Drives supported.

Adaptable to customer needs and environment.

### Optional Features

Integrated Hardware RAID with Flash Backup and SuperCap technology

Remote Management

Flash Memory Support

Up to Six PCI slots for flexibility and additional I/O

### Benefits

Supports RAID levels 0, 1, 5, and 6 providing greater protection, reliability, and performance.

Lights-out management via optional Intel® Remote Management Module 4 (RMM4) Dedicated Management NIC. Improved integration over previous versions.

Choice of multiple flash memory options are available:

- » Internal bootable USB flash device
- » Two (2) front accessible SD flash media devices
- » SATA solid state drives

Faster performance with PCI-E Gen3/Gen 2. Two low-profile PCI-E slots (one internal without rear I/O accessibility); Choice of risers to support either:

(1) Four PCI-E x 8 slots; (2) Two PCI-E x16 slots; (3) Two PCI-E x8 or one PCI-E x16 and two PCI-x slots.

### 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.

## Technical Information

### Processor

Type	Dual 8-Core Intel® Xeon® Processor E5-2600 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 drives
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

## Technical Information

### 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	3.45 inches (87.6 mm)
Width	17.14 inches (435.3 mm)
Depth	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

\* per Intel®'s 25-GS0009 Boards and Systems Environmental Standards Governing Spec  
\*\* 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 Intermittents; 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

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