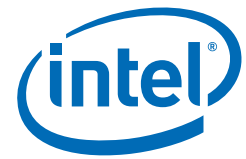


## Product Brief

Intel® Carrier Grade Server TIGW1U

Telecom and Compute Products



# Intel® Carrier Grade Server TIGW1U

## Now supporting the Quad-Core Intel® Xeon® processor L5410

### Product Overview

The Intel® Carrier Grade Server TIGW1U is a NEBS-3 and ETSI-compliant, carrier-grade rack-mount server, providing industry-leading CPU performance and power efficiency in a compact package. It supports the Quad-Core Intel® Xeon® processor L5410<sup>A</sup> and Dual-Core Intel® Xeon® processors LV 5148<sup>A</sup> and LV 5128<sup>A</sup>, both with 64-bit functionality, providing improved performance-per-watt over previous-generation rack-mount servers.

This high-performing server is an excellent choice for the demanding environment and limited space of central offices and highly available data centers. It is also ideal for Services over IP (SolP) for next-generation telecom solutions and communications networks. Offered as a standard building block, the Intel Carrier Grade Server TIGW1U enables OEMs and TEMs to create their own value-added solutions for a variety of telecom applications including unified messaging, SolP, call control, media and signaling gateways, and operational system support.

### Quad-Core Intel® Xeon® Processor L5410

Quad-Core Intel Xeon processor L5410, with extended life cycle support, provides breakthrough performance and energy efficiency for compute-intensive applications. Dual-socket platforms based on the Quad-Core Intel Xeon processor 5400 series provide high levels of computing for threaded applications, delivering eight-thread, 32- and 64-bit processing capabilities. Designed on 45nm enhanced Intel® Core™ microarchitecture, the 5400 series delivers excellent performance-per-watt with 12 MB of L2 cache per processor.

### Innovative Server for Rugged Environments

**Carrier-Grade Features:** NEBS-3 and ETSI-compliant, it is fire-resistant and can withstand extreme heat, humidity, altitude and zone 4 earthquake shock.

**Advanced Server Management:** Telco Alarm Management features provide visual, audible (optional), and SNMP event indications of faults, consistent with the rigid requirements of the telecom central office environment.



**Managed Life Cycle:** Provides a three-year minimum product availability of the server and spares for excellent customer investment protection. Availability may be optionally extended up to five years. A product warranty of three years applies.

### Configuration

Within the 1U, 20-inch ruggedized chassis, the TIGW1U provides a rich set of standard features and configuration flexibility in the base model, with optional features to enable even greater capability and capacity.

#### Standard Configuration

- Two sockets for support of Quad-Core Intel Xeon processor L5410 or Dual-Core Intel Xeon processors LV 5148 or LV 5128
- One super slot with PCI-X riser
- Drive bays for up to three hot-swap 2.5-inch SAS hard disk drives
- Six FB-DIMM slots (240-pin DDR2-533/667)
- 450W AC or DC hot-swap power supply
- Bay for slimline CD/DVD-ROM optical storage (included)
- Lockable chassis
- Customizable front bezel

**Available Options** (may be purchased as accessories/spares)

- Second power supply (AC or DC) to allow for dual redundancy
- PCIe\* x8 riser (as alternate to the included PCI-X riser)
- Intel® Remote Management Module (RMM2 with GCM3)
- Flash boot
- Hardware RAID kit

# Intel® Carrier Grade Server TIGW1U

## Features

Support for two 64-bit Quad-Core Intel® Xeon® processors L5410 on 45nm technology or two 64-bit Dual-Core Intel® Xeon® processors LV 5148 or LV 5128 on 65nm technology

Three-year extended lifecycle support with option to extend

Shallow 20-inch depth

Single or redundant (optional) AC or DC power supply

Integrated four-port 10/100/1000 Mbps Ethernet

Supports up to three hot-swap 2.5-inch SAS hard disk drives

S/W RAID 0,1 and H/W RAID 0, 1, and 5 (optional)

Optical Storage

Remote manageability (optional)

Flash storage capability supports Intel® Z-U130 Value Solid State Drive (Requires TMwVSSDRIVE01w purchased separately)

## Benefits

- New 45nm enhanced Intel® Core™ microarchitecture boosts performance on multiple applications/user environments and data-demanding workloads
- Performance-optimized, energy-efficient processor enables denser deployments

- Reduces customer risk for long product roll-outs
- Fewer platform transitions requiring additional testing and software

- Increases installation and service flexibility

- Flexibility of installation and applications; Uninterrupted operation

- Implementation favoring intense network I/O traffic workloads

- High-performance, enterprise-class drives for 24/7 operation

- Greater data protection and storage reliability
- Improved availability, integrated capacity and performance

- DVD-CDR installed

- Lights-out management; Remote keyboard, video, and mouse

- High-speed, high-density storage, faster boot times, USB interface

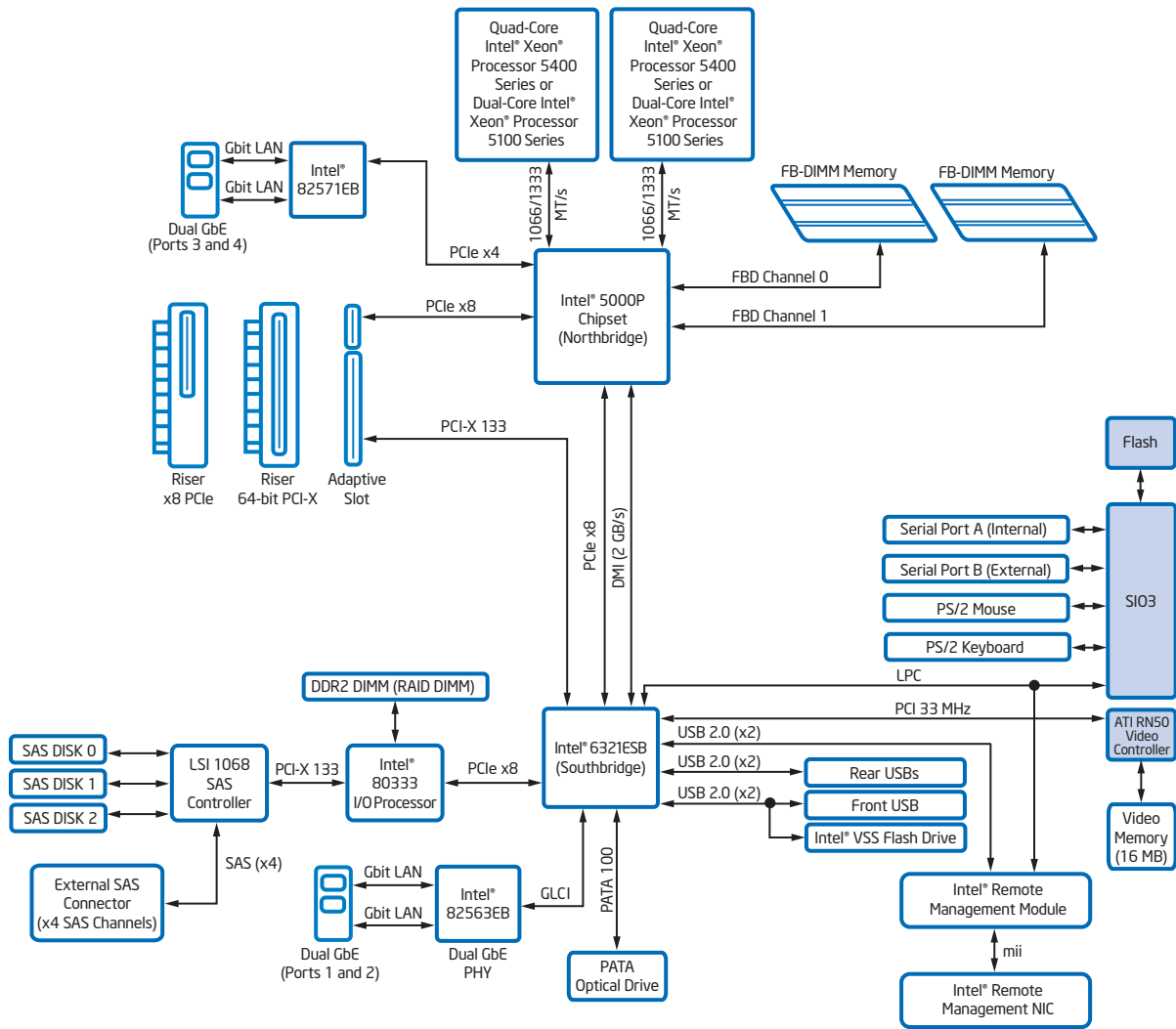


Figure 1. Intel® Carrier Grade Server TIGW1U block diagram (fully configured system)

## Intel® Carrier Grade Server TIGW1U

- |                                     |   |                         |                          |
|-------------------------------------|---|-------------------------|--------------------------|
| A Front serial B port (RJ45)        | F Major alarm LED (amber or red)        | J NIC activity LED      | O Drive bay 0 and handle |
| B Power switch                      | G Power alarm LED (amber)               | K System ID LED (white) | P Drive bay 1 and handle |
| C Reset switch                      | H Disk activity/fault LED (green/amber) | L ID switch             | Q Drive bay 2 and handle |
| D Critical alarm LED (amber or red) | I Main power LED (green)                | M NMI switch            | R USB port 2             |
| E Major alarm LED (amber or red)    |   | N Optical drive bay     |                          |

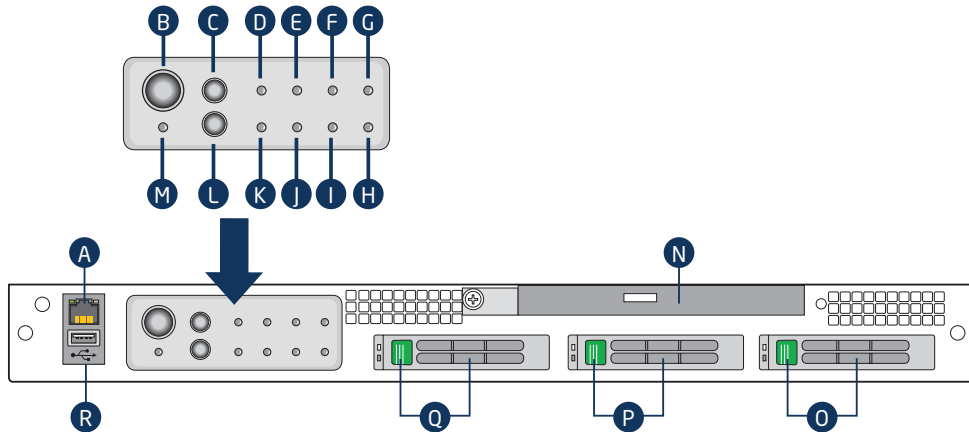


Figure 2. Intel® Carrier Grade Server TIGW1U front panel

- |                                  |  |   |   |
|----------------------------------|--|---|---|
| A PS/2 mouse                     | F Ground studs (for system with DC input power supply) | J Power supply 2 input connector (AC or DC) | O USB port 0 (bottom), USB port 1 (top) |
| B RJ45 COM2 (Serial B) port      | G Power supply 1 (AC or DC)                            | K External 4x SAS connector                 | P DB15 alarms connector                 |
| C RJ45 NIC 3 connector           | H Power supply 1 input connector (AC or DC)            | L GCM 3 port                                | Q Video connector                       |
| D RJ45 NIC 2 connector           | I Power supply 2 (AC or DC), optional                  | M NIC port 1                                | R PS/2 keyboard connector               |
| E PCI card bracket (full-height) |  | N NIC port 4                                |   |

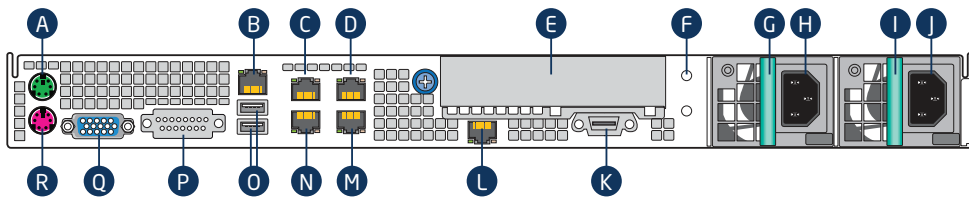


Figure 3. Intel® Carrier Grade Server TIGW1U back panel

## Specifications

### Processor

Type	Two 64-bit Quad-Core Intel® Xeon® processors L5410 <sup>a</sup> or two 64-bit Dual-Core Intel® Xeon® processors LV 5148 <sup>a</sup> or LV 5128 <sup>a</sup>
Core	Quad or Dual
Front-side bus	1066 and 1333 MHz
Expansion bus	One full-height/full-length super slot: PCI-X or PCIe x8

### Chipset

Memory controller hub	Intel® 5000P Memory Controller Hub (MCH)
I/O controller hub	Intel® 6321ESB I/O Controller Hub (ICH)

### Memory

Cache memory	12 MB or 4 MB shared L2 cache
Maximum memory capacity	24 GB with 4 GB memory per DIMM
Number of DIMM slots	Six
Memory type	FB-DIMM technology at 533 and 667 MHz

### Physical

Height	1.70 inches (43.25 mm)
Width	16.93 inches (430 mm)
Depth	20 inches (508 mm)

## Specifications (continued)

### Storage

Type	SAS 2.5-inch hot-swap HDD
Redundancy	S/W RAID 0, 1 and H/W RAID 0, 1, and 5 (optional)
Internal	Carrier with three HDD trays
External	SAS port on rear supports external x4 SAS

### Environmental

Temperature, operating	+5° C to +40° C (41° F to 104° F)
Temperature, short-term operating (<96 hrs)	-5° C to 50° C
Temperature, non-operating	-40° C to 70° C (-40° F to 158° F)
Altitude	0 to 1,800m (0 to 5,905 ft) @ 40° C 0 to 4,000m (0 to 13,123 ft) @ 30° C
Humidity, operating	5% to 85%
Humidity, short-term operating	5% to 90%
Humidity, non-operating	95%, non-condensing at temperatures of 23° C (73° F) to 40° C (104° F)
Vibration, operating	Swept sine survey at an acceleration amplitude of 0.1 G from 5 to 100 Hz and back to 5 Hz at a rate of 0.1 octave/minute; 90 minutes per axis on all three axes as per Bellcore GR-63-CORE standards
Vibration, non-operating	Swept sine survey at an acceleration amplitude of 0.5G from 5 to 50 Hz at a rate of 0.1 octaves/ minute, and an acceleration amplitude of 3.0 G from 50 to 500 Hz at a rate of 0.25 octaves/minute, on all three axes as per Bellcore GR-63-CORE standard. 2.2 Grms, 10 minutes per axis on all three axes
Shock, operating	Half-sine 2 G, 11ms pulse, 100 pulses in each direction, on each of the three axes*
Shock, non-operating	Trapezoidal, 25 G, 170 inches/sec delta V, three drops in each direction, on each of the three axes*
Acoustic	Sound pressure: <55dBA at ambient temperatures <24° C measured at bystander positions in operating mode

### Connections

PCI adapter slot support	PCI-X (included) or PCIe x8 or (optional)
PS/2	Keyboard and mouse connections
USB 2.0 ports	Three: one front/two rear
COM ports	One port: front or rear access

<sup>4</sup>Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See [http://www.intel.com/products/processor\\_number](http://www.intel.com/products/processor_number) for details.

\*As per the Intel® Environmental Standards Handbook

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Intel® Carrier Grade Servers: [intel.com/products/server/cgserver](http://intel.com/products/server/cgserver)

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### Regulatory Compliance

Safety	UL 60950-1, 1st Edition/CSA 22.2 60950-1, Low Voltage Directive 2006/95/EC, GS to EN60950-1, 1st Edition, CB Certificate and Report to IEC60950-1, 1st Edition and all international deviations
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### Electromagnetic Compatibility

Australia/New Zealand	C-tick, Class A
Canada	ICES-003 Class A Limit
China	CCC Approval, Class A (EMC and Safety)
Europe	EMC Directive, 2004/108/EC EN55022, Class A Limit, Radiated and 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 Interruptions EN61000-3-2 Harmonic Currents EN61000-3-3 Voltage Flicker
Japan	VCCI Class A
Korea	RRL Approval, Class A
Russia	Gost Approval
Taiwan	BSMI Approval, CNS 13438, Class A and CNS13436 Safety
USA	FCC 47 CFR Parts 2 and 15, Verified Class A Limit
International	CISPR 22, Class A Limit, CISPR 24 Immunity

### Order Options:

Intel® Carrier Grade Server TIGW1U

Item Market Name	Description
TMRA0201W	Base model with AC power supply
TMRD0201W	Base model with DC power supply

