

Embedded Single Board Computer with 11th Generation Intel Xeon W-11000 Processors

3U CompactPCI Serial

- 11th Gen Intel Xeon W Processor (Tiger Lake)
- Up to 64 GB soldered DDR4-3200 ECC RAM
- 120 GB NVMe on-board storage
- Dual 10G Ethernet (optional)
- Board Management Controller, TPM 2.0
- Front I/O: 3× 1G Ethernet RJ45, 10Gbps USB-A & USB-C with DP Alt Mode
- Rear I/O: 1G Ethernet, PCIe, USB 10Gbps, SATA
- -5 °C to +60 °C operating temp. (system ambient)
- Long-term availability



Technical Data

CPU

- The following CPU types are supported:
 - Intel Xeon W-11865MRE, 8 cores, 16 threads, 2.6 GHz, 45 W, -40 °C to +100 °C
 - Intel Xeon W-11865MRE, 8 cores, 16 threads, 2.1 GHz, 35 W, -40 °C to +100 °C
 - Intel Xeon W-11555MRE, 6 cores, 12 threads, 2.6 GHz, 45 W, -40 °C to +100 °C
 - Intel Xeon W-11555MRE, 6 cores, 12 threads, 2.1 GHz, 35 W, -40 °C to +100 °C
 - Intel Xeon W-11155MRE, 4 cores, 8 threads, 2.4 GHz, 45 W, -40 °C to +100 °C
 - Intel Xeon W-11155MRE, 4 cores, 8 threads, 1.9 GHz, 35 W, -40 °C to +100 °C
 - Intel Xeon W-11865MLE, 8 cores, 16 threads, 1.5 GHz, 25 W, 0 °C to +100 °C
 - Intel Xeon W-11555MLE, 6 cores, 12 threads, 1.9 GHz, 25 W, 0 °C to +100 °C
 - Intel Xeon W-11155MLE, 4 cores, 8 threads, 1.8 GHz, 25 W, 0 °C to +100 °C
 - Other processor types are available on request

Memory

- System RAM: 64 GB max., soldered DDR4, ECC
- Non-volatile RAM (NVRAM): 64 kB FRAM

Mass Storage

- NVMe (soldered); 120 GB (standard)

Graphics

- Processor graphics

Data Sheet



Interfaces

- SATA
 - 4 × SATA Revision 3.x, backplane
- Video
 - 1 × DisplayPort 1.4a, USB Type-C, for service
- USB
 - 1 × USB 3.2 Gen 2x1, Type-A, for service
 - 1 × USB 3.2 Gen 2x1, Type-C, for service
 - 4 × USB 3.2 Gen 2x1, backplane
- Ethernet
 - 3 × 10/100/1000BASE-T, RJ45
 - 2 × 10/100/1000BASE-T, backplane
- PCI Express
 - 2 × PCIe 3.0, x8, backplane
 - 1 × PCIe 3.0, x4, backplane
 - 3 × PCIe 3.0, x4, backplane
 - 2 × PCIe 3.0, x1, backplane
- Serial
 - 1 × USB-to-UART, USB Type-A
- I2C
 - 1 × backplane
- LED
 - Status: board status (BMC)
 - Ethernet: activity, link
 - Hot-swap

Supervision and Management

- Board management controller
- Temperature measurement
- System watchdog (BMC)
- Real-time clock, buffered by supercapacitor (up to 4 days) or battery (1 year)
 - Buffer time: up to 4 days (96 hours) @ +25 °C, within first 2 years
- Trusted Platform Module 2.0

Product Standard

- CompactPCI Serial: CompactPCI Serial PICMG CPCI-S.0 Specification

Electrical Specifications

- Supply voltage: +12 V (9.5 V to 15.5 V)
- Power consumption: 76 W max.

Mechanical Specifications

- Dimensions: 3U, 4 HP
- Weight: 430 g
- Cooling: Air cooling, forced convection, airflow 1.5 m/s

Product Compliance: Rail - Wayside Non-Safety Related

- Operating temperature: -5 °C to +60 °C (EN 50125-3:2003, class T1, shelter N.T.C.), extended by +5 °C
- Storage temperature: -40 °C (EN 60068-2-1:2007, Ab) to +85 °C (EN 60068-2-2:2007, Bb)
- Altitude: +3000 m max. (EN 50125-3:2003, class AX)
- Humidity: 95 % RH max. (EN 50125-2:2002, building N.C.C., class T1)
- Pollution degree: EN 50124-1:2017, class PD2
- Shock: 11 ms @ 20 m/s² (EN 50125-3:2003, in a switch cabinet 1 m to 3 m from the track)
- Vibration: 2.3 m/s² (EN 50125-3:2003, in a switch cabinet 1 m to 3 m from the track)
- Electrical safety
 - EN 50124-1:2017
 - EN 62368-1:2014 + AC:2015



- EMC emission: EN 61000-6-4:2007 + A1:2011
- EMC immunity: EN 61000-6-2:2005

Product Compliance: Information Technology Equipment

- Operating temperature: -5 °C to +60 °C (product model 02G028I00); 0 °C to +40 °C (product model 02G028I01)
- Electrical safety: EN 62368-1:2014 + AC:2015
- Flammability (PCBs): UL 94 V-0
- EMC emission
 - EN 55032:2015 (multimedia equipment), class A (industrial environments)
 - EN IEC 61000-6-4:2019 (generic standard, industrial environments)
- EMC immunity
 - EN 55035:2017 (multimedia equipment)
 - EN 61000-6-2:2005 (generic standard, industrial environments)

Reliability

- MTBF: 236 581 h predicted @ 40 °C according to IEC/TR 62380 (RDF 2000)

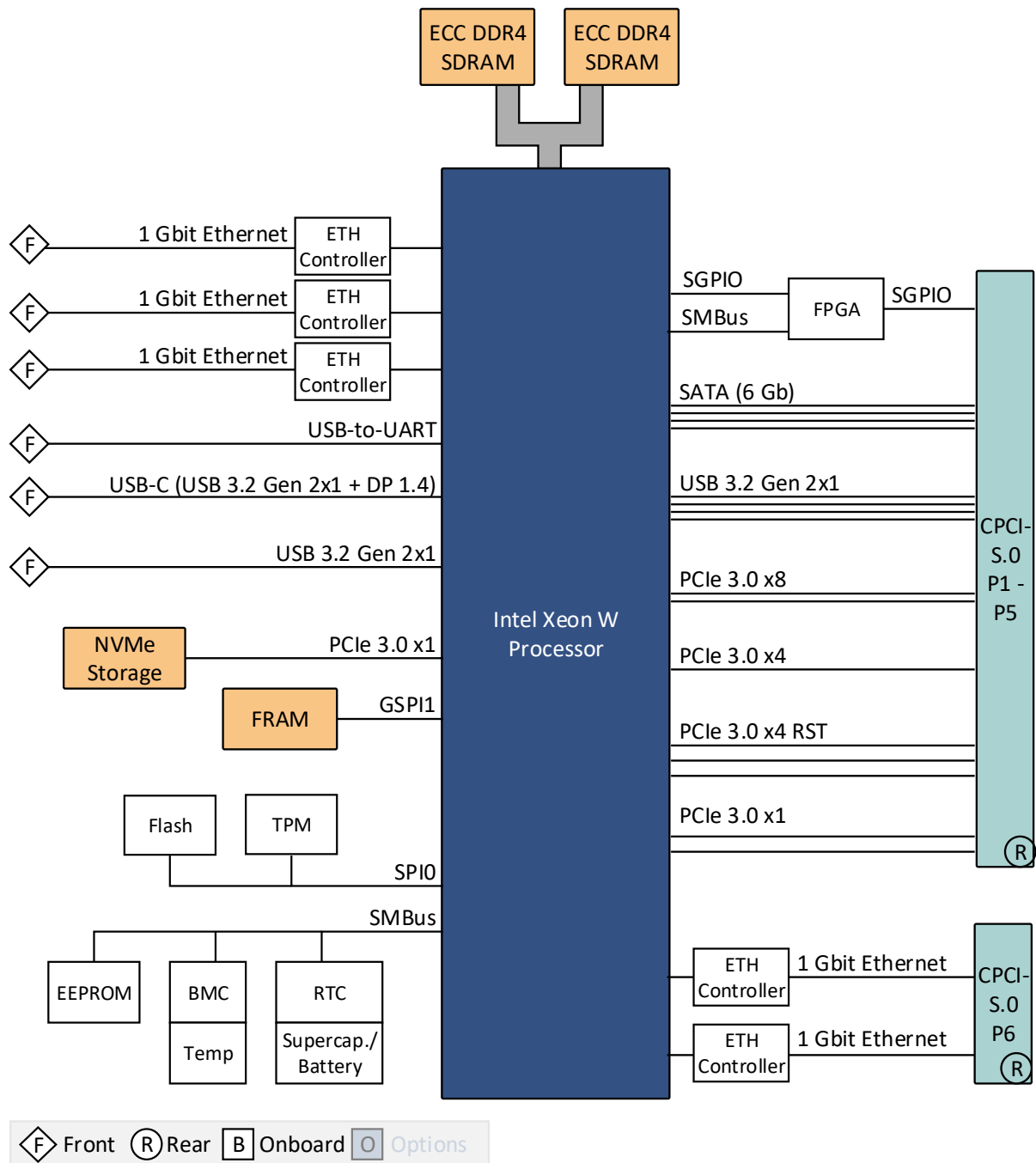
BIOS/Boot Loader

- AMI Aptio UEFI Firmware

Software Support

- Linux
 - Tested with: Red Hat Enterprise Linux 9.2 - 9.x; Ubuntu 22.04 LTS
- Windows
 - Windows 10 IoT Enterprise 64-bit
 - Not all functions are supported
- See the product User Manual for details on software support:
www.duagon.com/products/g28i/#doc
- See section Software on the product web page for available packages:
www.duagon.com/products/g28i/#downl
- See also Application Note *Recommendations for a Robust Software Setup*

Diagram





Ordering Information

Standard Models

02G028I00	3U CPCI Serial, 4 HP, Intel Xeon W-11155MLE, 4 cores, 8 threads, 1.8 GHz, 25 W TDP, 16 GB DDR4 (ECC) RAM, 120 GB NVMe, 3x 1G Ethernet RJ45, 1x USB 3.2 Gen 2x1, 1x USB 3.2 Gen 2x1 and DisplayPort over USB-C, 1x console redirection via USB, -5 °C to +60 °C
02G028I01	3U CPCI Serial, 4 HP, Intel Xeon W-11865MRE, 8 cores, 16 threads, 2.6 GHz, 45 W TDP, 64 GB DDR4 (ECC) RAM, 120 GB NVMe, 3x 1G Ethernet RJ45, 1x USB 3.2 Gen 2x1, 1x USB 3.2 Gen 2x1 and DisplayPort over USB-C, 1x console redirection via USB, 0 °C to +40 °C

► **Contact duagon** for availability and lead times for product models not listed above.