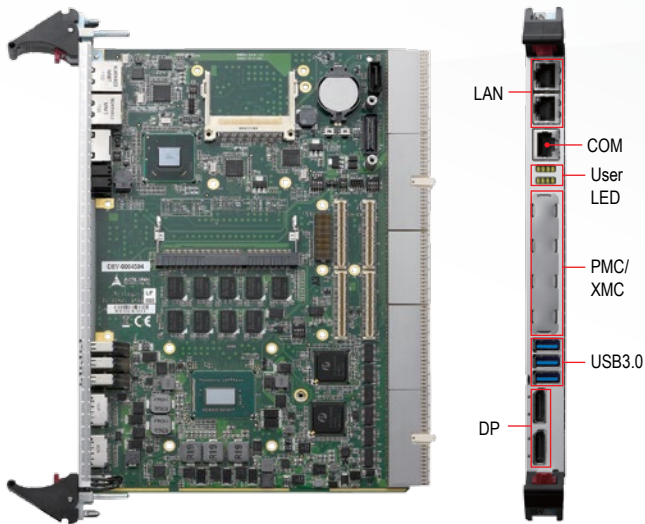# cPCI-6520 Series

## 6U CompactPCI 3rd Gen Intel® Core™ i7 Processor Blade with ECC SDRAM



## Features

- Low power 22nm the 3rd generation Intel® Core™ i7 processor
- Dual channel DDR3 ECC memory, one channel soldered and one channel SO-CDIMM
- Supports three independent displays: (2xDP/VGA+VGA/DVI)
- USB 3.0 and PCI Express Gen3 support
- Remote management and optional TPM support

**CompactPCI®**  **EXTENDED TEMPERATURE**

# Specifications

## Processor & System

| | |
|---|---|
| CPU | µFC-BGA quad-core Intel® Core™ i7-3615QE processor, 2.3GHz, 6MB L3 cache, 45W TDP |
| | µFC-BGA quad-core Intel® Core™ i7-3612QE processor, 2.1GHz, 6MB L3 cache, 35W TDP |
| | µFC-BGA dual-core Intel® Core™ i7-3555LE processor, 2.5GHz, 4MB L3 cache, 25W TDP |
| | µFC-BGA dual-core Intel® Core™ i7-3517UE processor, 1.7GHz, 4MB L3 cache, 17W TDP |
| | Passive heatsink |
| Chipset | Intel® QM77 PCH |
| Memory | Dual channel DDR3-1333/1600 SDRAM with ECC, up to 16GB |
| | One channel in SO-CDIMM socket up to 8GB; one channel soldered onboard up to 8GB (dependent on availability of memory modules and chips) |
| BIOS | AMI® EFI BIOS, 64Mbit SPI flash memory |
| CompactPCI Bus | PCI 32/64-bit, 33/66MHz, 3.3V or 5V universal V(I/O) |
| | Supports operation in system slot as master or in peripheral slot as stand-alone blade without connectivity to CompactPCI® bus (Satellite mode) |
| PICMG Standards | PICMG 2.0 CompactPCI R3.0 |
| | PICMG 2.1 Hot Swap R2.0 |
| | PICMG 2.9 System Management R1.0 |
| | PICMG 2.16 Packet Switch Backplane R1.0 |

## Connectivity

| | |
|---|---|
| PMC/XMC | One PCI 32/64-bit, 33/66/133MHz PMC site or PCI-Express x8 XMC site with rear I/O |
| Ethernet | Three Intel® 82574IT GbE and one Intel® 82579LM PHY controllers for two 10/100/1000BASE-T ports on front panel and two 10/100/1000BASE-T ports to J3 for PICMG 2.16 |
| | Two additional 10/100/1000BASE-T ports from Intel® 82576EB on RTM (cPCI-R6100 or cPCI-R6110) |
| Graphics | Integrated in Intel® processor |
| | Two dual mode DisplayPorts on front panel with optional DVI/VGA/HDMI support by adapter cable |
| | DVI, eDP and VGA routed to rear |
| | Supports three independent displays by 2x DP or 2x VGA on front panel and one DVI/VGA/eDP in rear |
| | Additional discrete ATI GPU supporting two DVI ports on RTM cPCI-R6700 |
| USB | Three USB 3.0 ports on front panel |
| | Six USB 2.0 ports routed to rear |
| PS/2 | PS/2 keyboard/mouse port to rear |
| Serial Port | Up to three 16C550 compatible serial ports |
| | One RJ-45 RS-232/422/485 port on front panel |
| | Two serial ports routed to rear |
| Audio | High Definition Audio signals routed to rear |

## Storage

| | |
|---|---|
| SBC | One SATA 6 Gb/s direct connector for 2.5" onboard drive (removable) |
| | Optional CFast socket (shares space with SATA direct connector) |
| | CompactFlash socket onboard |
| RTM* | Up to three SATA ports |
| | CF (x1) and SD (x1) sockets |
| | Eight SAS ports supporting hardware RAID via two mini-SAS x4 connectors (LSISAS1068E) |
| | *Available interfaces dependent on RTM model selected |

## Operating System

| | |
|---|---|
| OS | Microsoft Windows Server 2008, XP, 7 |
| | Red Hat Enterprise Linux 6.2 |
| | Fedora 16 |
| | Wind River VxWorks 6.9 |
| | (Please contact ADLINK for other OS support) |

## Miscellaneous

| | |
|---|---|
| LED | Power, WDT, Hard Disk, Hot Swap and Port 80 |
| Battery | Coin cell lithium battery onboard for RTC CMOS RAM |
| TPM | Atmel AT97SC3204 (optional, support upon request) |
| Watchdog Timer | System Reset and NMI, with programmable interval, 1-65535 seconds or minutes |
| Hardware Monitor | Monitors CPU temperature, system temperature, Vcore and DC voltages |

## Mechanical & Environmental

| | |
|---|---|
| Form Factor | 6U 4HP (single slot) CompactPCI |
| | 233.33mm x 160mm (LxW) |
| | Equipped with J1, J2, J3, J5 connectors |
| Operating Temperature | 0°C to +60°C standard |
| | -20°C to +70°C extended temperature (cPCI-ET6520) |
| Storage Temperature | -40°C to 85°C extreme temperature (cPCI-EX6520 with Core™ i7 3555LE and Core™ i7 3517UE CPU) |
| RH Humidity | 95% non-condensing |
| Shock | 15G peak-to-peak, 11ms duration, non-operating |
| Vibration | 2 Grms random vibration, 5-500Hz, each axis, operating |
| Power Consumption | 3.23A @3.3V, 9.68A @5V, total 59W for Core i7-3612QE |
| | 3.37A @3.3V, 12.12A @5V, total 71.7W for Core i7-3615QE |
| Weight | Net weight 791g with heatsink |
| EMI/EMC | EN 55022 Class A, EN 55024, EN 61000-3-2, EN 61000-3-3 |

1 AdvancedTCA
2 6U cPCI Blades
3 6U cPCI Platforms
4 3U cPCI Blades
5 3U cPCI Platforms
6 VPX
7 Embedded Flash Storage

## I/O Table

| | | GbE | USB 2.0 | USB 3.0 | COM | DVI | VGA | DP | PMC/XMC | SATA | CFast | CF | Mic-in | Line-out | PS/2 KB/MS | SD | SAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cPCI-6520 | Faceplate | 2 | | 3 | 1 (RJ-45) | | | 2 | | | | | | | | | |
| | Onboard | | | | | | | | 1 | | 1(1) | 1 | | | | | |
| cPCI-R6100 | Faceplate | 4 | 4 | | 1 (RJ-45) | 1 | 1 | | | | | | | | 1 | | |
| | Onboard | | | | | | | | | 2 (7-pin) | | 1 | | | | 1 | |
| cPCI-R6110 | Faceplate | 2 | 4 | | | | 1 | | | | | | | | 1 | | |
| | Onboard | | | | | | | | | 3(3) | | 1(4) | | | | 1 | |
| cPCI-R6200 | Faceplate | 2 | 5 | | 1 (DB-9) | 1 (DVI-I) | | | | | | | 1 | 1 | 1 | | 4 (SFF-8088) |
| | Onboard | | 1 (5-pin) | | 1(2) (10-pin) | | | | | 3(3) | | 1 (optional)(3) | | | | | 4 (SFF-8087) |
| cPCI-R6700 | Faceplate | 2 | 3 | | 1 (DB-9) | 2 (DVI-I ) | | | | | | | | | | | |
| | Onboard | | 2 | | 1(2) (10-pin) | | | | | 3(5) (7-pin) | | | | 1 (10-pin) | 1 (10-pin) | | |
| cPCI-R6500D | Faceplate | 2 | 1 | | | 2 (DVI-I +DVI-D) | | | | | | | | | | | |
| | Onboard | | 1 (10-pin) | | 2 (10-pin) | | | | | 3(5) (7-pin) | | | | 1 (10-pin) | 1 (10-pin) | | |
| cPCI-R65N0 | Faceplate | 2 | 1 | | 1 | 2 | | | | | | | | | 1 | | |
| | Onboard | | 1 | | 1 (Tx/Rx) | | | | | 3 (7-pin) | | | | | 1 (10-pin) | | |

(1) Removable adapter design. SATA adapter by default, can be replaced with CFast adapter.
(2) Tx, Rx signals only.
(3) Two 7-pin signal connectors onboard for external HDDs and one direct connector for onboard 2.5" SATA drive. SATA direct connector can be replaced with CompactFlash adapter (DB-6920CF).
(4) Converted from USB.
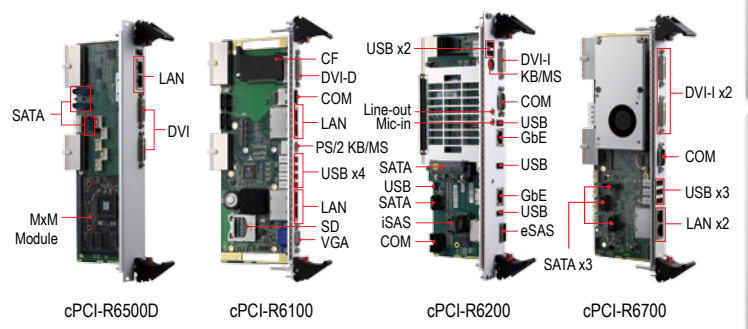(5) Space is reserved onboard for one 2.5" SATA drive.

## Ordering Information

| Model Number | Description/Configuration |
|---|---|
| **Processor Blades** | |
| cPCI-6520/3612Q/M4-0 | 4HP cPCI-6520 with Intel® Core™ i7-3612QE processor and 4GB DDR3-1333 ECC soldered memory with 2 xGbE, 3 xUSB3.0, COM, 2 xDP, SATA, CF and PMC/XMC |
| cPCI-6520/3555L/M0-4 | 4HP cPCI-6520 with Intel® Core™ i7-3555LE processor and 4GB DDR3-1333 ECC SODIMM module with 2 xGbE, 3 xUSB3.0, COM, 2 xDP, SATA, CF and PMC/XMC |
| cPCI-6520/3612Q/M4-4 | 4HP cPCI-6520 with Intel® Core™ i7-3612QE processor and 4GB DDR3-1333 ECC soldered memory and 4GB SODIMM module with 2 xGbE, 3 xUSB3.0, COM, 2 xDP, SATA, CF and PMC/XMC |
| **Rear Transition Modules** | |
| cPCI-R6002 | 4HP Rear I/O module with GbE x2, COM x2, USB x3,  SATA x2, DVI-I |
| cPCI-R6100 | 4HP Rear I/O module with GbE x4, COM, USB x4, SATA x2, DVI, VGA, PS/2, CF, SD socket |
| cPCI-R6110 | 4HP Rear I/O module with GbE x2, COM, USB x4, SATA x3, VGA, PS/2, CF, SD socket |
| cPCI-R6200 | 8HP Rear I/O module with GbE x2, USB x6, DVI-I, SATA x3, Mic-in, Line-out, PS/2 KB/MS, SAS x8 |
| cPCI-R6700 | 4HP Rear I/O module with discrete GPU ATI/AMD E4690, DVI-I x2, GbE x2, USB x3, COM x2, KB/MS header, SATA x3, audio header |
| cPCI-R6500D | 8HP Rear I/O module with AMD Radeon E6760 MXM module, 2x GbE, 1x DVI-I, 1x DVI-D, 1x USB,and 10-pin KB/MS, audio, 2x COM headers |
| cPCI-R65N0 | 8HP Rear I/O module with NVIDIA GeForce GTX660M MXM 3.0 module, supports DVI-I, DVI-D, USB 2.0, 2x GbE, COM (RS-232/422/485), PS/2 KB/MS |
| **Accessories** | |
| DB-CFast | CFast socket adapter board with screws |
| DP-DVI cable | DisplayPort to DVI adapter cable |
| DP-VGA cable | DisplayPort to VGA adapter cable |
| DP-HDMI cable | DisplayPort to HDMI adapter cable |

Contact your ADLINK representative for different CPU, memory and storage combinations. See 6U RTM selection guide for more options.



cPCI-R6500D      cPCI-R6100      cPCI-R6200      cPCI-R6700

Note: All specifications are subject to change without further notice.

ADLINK TECHNOLOGY INC.