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Find the *Aitech Defense Systems TM162* at our website: *Click HERE*

C163

4th Gen. Intel Core™ i7 6U VME SBC

Aitech
Embedded Computing *without* Compromise



- Rugged 6U VME Single-Slot SBC
- 4th Generation Intel® Core™ i7 CPU
  - Quad Core @ 2.4 GHz
  - HD Graphics 4600
- 8 GB DDR3L with ECC
- Up to 128 GB On-Board Flash Disk
- Versatile Board I/O
  - USB 3.0 & 2.0
  - SATA
  - GbE
  - Serial
  - Discrete
  - CANbus
  - Audio In + Out
  - RGBHV Out
  - HDMI/DVI Out
- 2 PMC/XMC Slots
- WWDT, ETR, RTC, Temp. Sensors
- Windows®, VxWorks®, Linux® Support
- Conduction and Air-Cooled Versions
- Vibration and Shock Resistant



C163

4th Gen. Intel Core™ i7 6U VME SBC

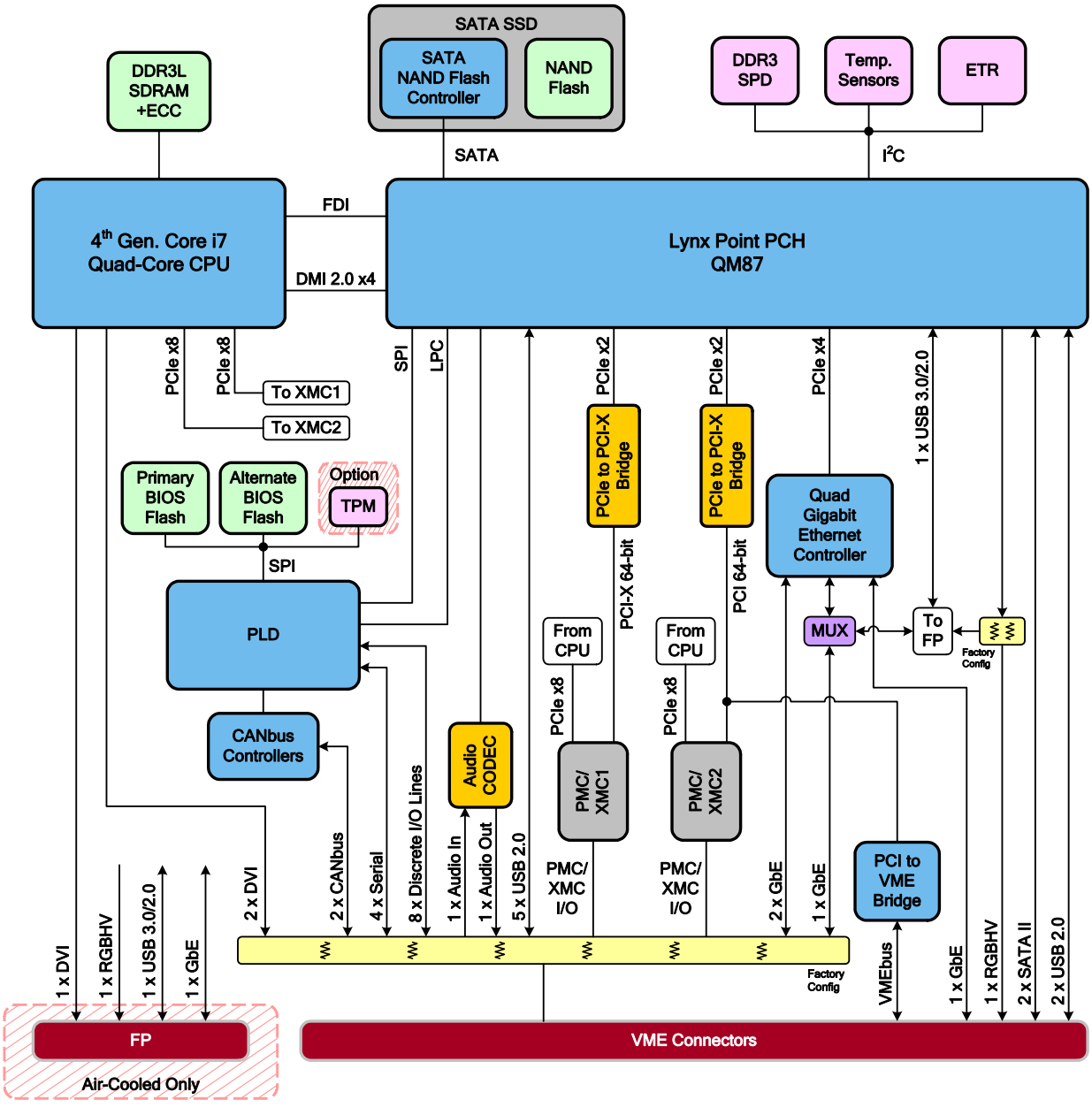
Aitech
Embedded Computing *without* Compromise

Aitech's C163 is a high-performance 6U VME SBC for embedded and harsh environment applications. The heart of the C163 is Intel's Haswell platform, featuring a 4th Generation Intel® Core™ i7 Quad Core processor with integrated HD Graphics 4600, coupled with a companion Lynx Point QM87 I/O Platform Controller Hub (PCH).

The processor's integrated 2D/3D graphics controller supports graphics and video processing and provides RGBHV and HDMI/DVI outputs.

The C163 integrates large on-board RAM (DDR3L) and mass storage (SATA Flash disk) resources, and provides a variety of popular I/O interfaces to meet a wide range of system requirements. Expandability and further flexibility are provided by two industry standard PMC/XMC slots.

C163 mechanical and electrical designs guarantee operation over the full range of rugged application environments. It is available in industry standard conduction- and air-cooled form factors.



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4th Gen. Intel Core™ i7 6U VME SBC

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Board Architecture

Processor	4th Gen. Intel® Core™ i7 – Quad Core @ 2.4 GHz, Integrated HD Graphics 4600, 6 MB Last Level Cache
Chipset	Intel Lynx Point QM87 Platform Controller Hub
VMEbus	VME64 per ANSI/VITA 1 and VME64x per ANSI/VITA 1.1
Board Resources	• Watchdog Timers (Windowed + Standard) • Trusted Platform Module (TPM) – optional (1) • Temperature Sensors • Elapsed Time Recorder • Real Time Clock • 8 Counters/timers

Notes: (1) TPM is available as a special order option, contact an Aitech representative for more information

Memory Resources

RAM	8 GB of DDR3L SDRAM in dual banks with ECC operates at 1600 MT/s
Flash Disk	Up to 128 GB SATA Flash Disk
Boot Flash	Dual BIOS Flash devices (Primary device for normal board operation, Alternate device for board maintenance)

I/O

	I/O Variant (1)		
	Variant #0 On-board I/O	**Variant #1 PMC I/O**	**Variant #2 XMC I/O**
Gigabit Ethernet - 10Base-T/100Base-TX/1000Base-T	4 (2)	2 (3)	1 (3)
USB 2.0	7	2	2
USB 3.0	1 (4)	1 (4)	1 (4)
SATA 2.0	2	2	2
Serial Ports Asynchronous UARTs. Software configurable as RS-232/422/485.	4	4	1
Discrete I/O Lines Individually software configurable as input (with optional interrupts) or output, and as SE (1 line per channel) or DIFF RS-422 (2 lines per channel)	4	8	8
CANbus	2	0	0
Audio - Stereo	1 In + 1 Out	1 In + 1 Out	0
DVI/HDMI Output	2 (5)	0 (5)	0 (5)
RGBHV Output	1 (6)	1 (6)	1 (6)
PMC 1 I/O Pins	55	64	0
PMC 2 I/O Pins	22	64	0
XMC 1 I/O Pins: Diff Pairs + SE	0	0	20 + 38
XMC 2 I/O Pins: Diff Pairs + SE	0	0	20 + 38

Notes:
(1) C163 I/O Variants offer different combinations/quantities of on-board and PMC/XMC I/O via factory configuration; additional I/O routing options may be available per customer request, contact an Aitech representative for more information
(2) Front panel/backplane routing of one port is software configurable
(3) One additional GbE port is available at the front panel of air-cooled versions
(4) The USB 3.0/2.0 port is available only at the front panel of air-cooled versions
(5) One additional DVI/HDMI output channel is provided at the front panel of air-cooled versions, a maximum of two DVI/HDMI outputs can be used simultaneously
(6) The RGBHV output is routed by factory configuration to the backplane (in conduction-cooled versions) or to the front panel (in air-cooled versions)

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PMC/XMC Slots

PMC 1	64-bit PCI/PCI-X @ 133/66/33 MHz, universal site supports 3.3 V and 5 V PCI I/O signaling levels
PMC 2	64-bit PCI @ 33 MHz, supports 5 V PCI I/O signaling level
XMC 1 & 2	For each site: PCIe x8 port supporting Gen2 and Gen1 speeds and port widths of x8/x4/x2/x1, 5 V VPWR supply

Software

Operating Systems	Windows®, WindRiver VxWorks®, and Linux® are supported
Drivers	Operating system specific device drivers for board resources are available
BIT	Built-In Tests are available

Mechanical

	Form Factor & Dimensions	Weight
Air-Cooled	6U VME per IEEE Std 1101.10-1996	< 800 g (1.8 lbs)
Conduction-Cooled	6U VME per IEEE Std 1101.2-1992	< 1100 g (2.5 lbs)

Power

	+3.3 V (4)	+5.0 V	+12 V (3)	-12 V (3)	Total
Typical (1,5)	0 A	5.32 A	0 A	0 A	26.6 W
Maximum (2,5)	0 A	11.32 A	0 A	0 A	56.6 W

Notes:
(1) Typical power measured during Windows 7 idle condition
(2) Maximum power measured during PassMark® BurnInTest (CPU, memory, graphics)
(3) ±12V required for PMC/XMC only (not installed during test)
(4) In standard configurations of the C163, +3.3 V is generated on-board. The C163 can be factory configured to utilize the backplane +3.3 V supply as a special order option (to reduce required current from +5.0 V supply). Contact an Aitech representative for more information
(5) Actual power consumption depends on configuration and assembly options

Environmental

Specs per VITA 47	Air-Cooled			Conduction-Cooled	
	Commercial	**Rugged**	**Military**	**Rugged**	**Military**
Operating Temp.	AC1 (0 to +55 °C) (2)	AC3 (-40 to +70 °C) (2)	AC4 (-40 to +85 °C) (1,2)	CC3 (-40 to +70 °C) (3)	CC4 (-40 to +85 °C) (1,3)
Non-Operating Temp.	C1 (-40 to +85 °C)	C3 (-50 to +100 °C)	C4 (-55 to +125 °C)	C3 (-50 to +100 °C)	C4 (-55 to +125 °C)
Vibration	V1	V2	V2	V3	V3
Operating Shock	OS1	OS1	OS1	OS2	OS2
Altitude	15,000 ft.	35,000 ft.	70,000 ft.	35,000 ft.	70,000 ft.
Relative Humidity (4)	0 - 90%	0 - 100%			
Conformal Coating	N/A	Acrylic (Silicone and Urethane Optional)			

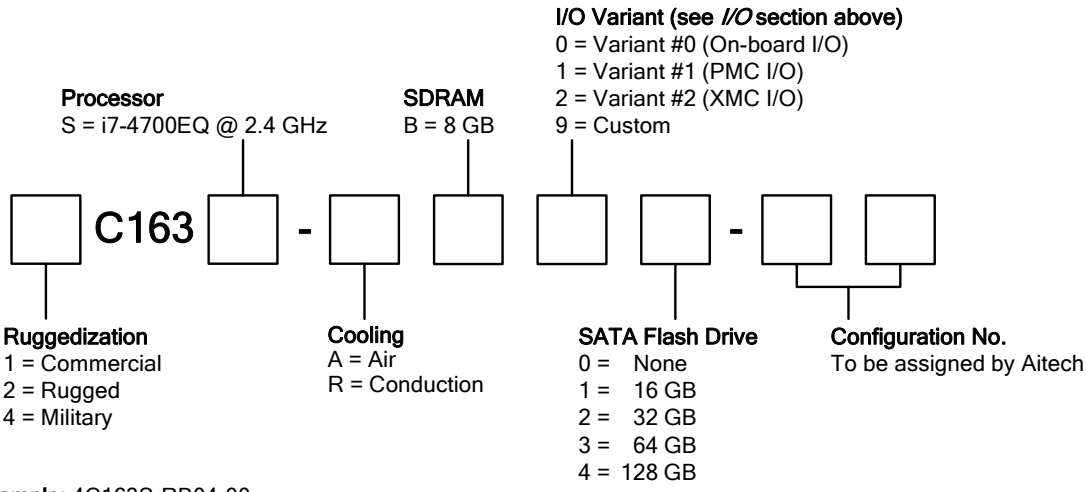
Notes:
(1) -55 °C available, contact an Aitech representative for more information
(2) Operating ambient air temperature (with sufficient airflow)
(3) Operating card edge temperature
(4) Non-condensing

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Ordering Information



Example: 4C163S-RB04-00

Accessories

TM162	Rear Transition Module (RTM) providing convenient access to C163 I/O interfaces via standard connectors and to all PMC/XMC I/O via headers. Supports both air and conduction-cooled C163 mounted in commercial air-cooled chassis. Refer to the TM162 datasheet for further information.

Contact Aitech

Contact your Aitech sales representative for additional product information, and for inquiries regarding customized configurations of the C163 and additional software support.



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