



# CRS-C3P-3CB1 COTS Rugged System

## Base Plate Cooled 3U CompactPCI Application Ready Computer

### Features

- Rugged base plate cooled chassis
  - 3 slot 3U CompactPCI
  - MIL-C-38999 connectors
- Freescale MPC7448 @ 1.0 GHz
- VxWorks Real-time operating system
- BIT support
- I/O capabilities
  - Ethernet
  - USB
  - Serial
  - MIL-STD-1553
  - ARINC
  - DAC
  - ADC
  - Discrete
  - RTD
- Designed for manned and unmanned aerial, sea-going and ground vehicles

GE Intelligent Platforms' CRS-C3P-3CB1 COTS Rugged System is a packaged prevalidated control computer system with a Freescale-based processor single board computer that provides a rugged and highly flexible computing platform suited for applications requiring rock-solid reliability such as civilian and military manned and unmanned aircraft, helicopters, over- and underwater research vessels, ground vehicles, and locomotives.

GE's COTS-based CRS-C3P-3CB1 Application Ready computer system can be deployed in the field as soon as your application is ready, or use the CRS-C3P-3CB1 as a starting point for multiple application-specific configurations.

The arduous task of integrating off the shelf boards has already been done for you—shortening your time to project completion. You have one point of contact for all issues and a single part number—not a collection of parts.

The CRS-C3P-3CB1 successfully integrates GE's boards, and modules, drawn from their wide selection of COTS boards, into open modular systems that are tested and qualified for rugged systems deployment. The CRS-C3P-3CB1 contains a fully integrated set of boards and modules designed to fulfill control applications.

GE Intelligent Platforms' Systems Group is fully compliant with AS9100 processes and brings years of experience designing

rugged systems to your project. Our world class program management competencies are tailored to help mitigate your risk.

GE conducts all design, analysis, manufacturing, and testing in compliance with any system appropriate MIL and industry standards such as MIL-STD-810, 704, 461, 1472, and DO-160.

GE has integrated and tested the CRS-C3P-3CB1 and provides Board Support Packages (BSP's) and drivers that you can easily use to integrate your application and reduce your software development cycle time.

To help jump start your project, GE offers Laboratory Development Units, or starter kits, preconfigured for development purposes. Based on the required system controller architecture and bus system, GE can provide the appropriate development system for your specific needs.

GE offers a Product Lifecycle Management (PLM) program of innovative Long-Term Support services to reduce the overall cost of ownership and provide industry-leading safeguards against component obsolescence. GE Intelligent Platforms is committed to supporting customer programs throughout their lifecycle.

The next page illustrates a small subset of the configurations that are available with this system. If you are interested in additional configuration options please contact your sales representative.



# CRS-C3P-3CB1 COTS Rugged System

STANDARD CONFIGURATIONS*	CRS-C3P-3CB1-00	CRS-C3P-3CB1-01	CRS-C3P-3CB1-02	CRS-C3P-3CB1-03	CRS-C3P-3CB1-04
Additional Memory (Flash, SSD, etc.)	N/A	Compact Flash Carrier 4GB	N/A	Compact Flash Carrier 4GB	N/A
Ethernet Ports	11x 10/100/1000BaseT	11x 10/100/1000BaseT	11x 10/100/1000BaseT	11x 10/100/1000BaseT	11x 10/100/1000BaseT
Serial Ports	1x RS232/422 1x RS232	1x RS232/422, 12x RS232/422/485 1x RS232	1x RS232/422, 12x RS232/422/485 1x RS232	1x RS232/422 1x RS232	1x RS232/422 1x RS232
USB Ports	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0
MIL-STD-1553 Channels	N/A	N/A	N/A	N/A	N/A
ARINC 429 Channels	N/A	N/A	N/A	N/A	N/A
DAC Channels	N/A	N/A	N/A	N/A	N/A
ADC Channels	N/A	N/A	N/A	N/A	N/A
Discrete I/O	4x GPIO and PRST	4x GPIO and PRST, 8x Discrete 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out	4x GPIO and PRST, 8x Discrete	4x GPIO and PRST	4x GPIO and PRST 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out
Other I/O	N/A	1x IRIG In/Out	1x IRIG In/Out	N/A	N/A
Power Dissipation	54W (max.)	65W (max.)	57W (max.)	56W (max.)	60W (max.)
Order Number	920-100834-000	920-100834-001	920-100834-002	920-100834-003	920-100834-004

STANDARD CONFIGURATIONS*	CRS-C3P-3CB1-05	CRS-C3P-3CB1-06	CRS-C3P-3CB1-07	CRS-C3P-3CB1-08	CRS-C3P-3CB1-09
Additional Memory (Flash, SSD, etc.)	N/A	Compact Flash Carrier 4GB	Compact Flash Carrier 4GB	N/A	N/A
Ethernet Ports	11x 10/100/1000BaseT	11x 10/100/1000BaseT	1x 1000BaseT or 2x 10/100BaseT	1x 1000BaseT or 2x 10/100BaseT	1x 1000BaseT or 2x 10/100BaseT
Serial Ports	1x RS232/422, 12x RS232/422/485 1x RS232	1x RS232/422 1x RS232	1x RS422, 2xRS232, 12x RS232/422/485	1x RS422, 2xRS232, 12x RS232/422/485	1x RS232/422, 12x RS232/422/485
USB Ports	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0
MIL-STD-1553 Channels	N/A	N/A	N/A	N/A	N/A
ARINC 429 Channels	N/A	N/A	N/A	N/A	N/A
DAC Channels	N/A	N/A	8x DAC	8x DAC	N/A
ADC Channels	N/A	N/A	12x ADC	12x ADC	N/A
Discrete I/O	4x GPIO and PRST, 8x Discrete 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out	4x GPIO and PRST 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out	4x GPIO and PRST, 8x Discrete, 8x GPIO 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out;	4x GPIO and PRST, 8x Discrete, 8x GPIO 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out;	4x GPIO and PRST, 8x Discrete
Other I/O	1x IRIG In/Out	N/A	1x IRIG In/Out; 12x RTD	1x IRIG In/Out; 12x RTD	1x IRIG In/Out
Power Dissipation	63W (max.)	62W (max.)	35W (max.)	33W (max.)	25W (max.)
Order Number	920-100834-005	920-100834-006	920-100834-007	920-100834-008	920-100834-009

# CRS-C3P-3CB1 COTS Rugged System

STANDARD CONFIGURATIONS*	CRS-C3P-3CB1-10	CRS-C3P-3CB1-11	CRS-C3P-3CB1-12	CRS-C3P-3CB1-13	CRS-C3P-3CB1-14
Additional Memory (Flash, SSD, etc.)	N/A	Compact Flash Carrier 4GB	N/A	N/A	Compact Flash Carrier 4GB
Ethernet Ports	1x 1000BaseT or 2x 10/100BaseT	1x 1000BaseT or 2x 10/100BaseT	1x 1000BaseT or 2x 10/100BaseT	2x 10/100/1000BaseT	1x 1000BaseT or 2x 10/100BaseT
Serial Ports	1x RS232/422, 12x RS232/422/485	1x RS232/422, 12x RS232/422/485	1x RS232/422, 12x RS232/422/485	1x RS232/422, 12x RS232/422/485	1x RS232/422, 12x RS232/422/485
USB Ports	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0
MIL-STD-1553 Channels	1x MIL-STD-1553	1x MIL-STD-1553; 1x RT_ADDR	1x MIL-STD-1553	N/A	N/A
ARINC 429 Channels	8x ARINC 429 RX Ch, 8x ARINC 429 TX Ch	NA	NA	12x ARINC 429 RX Ch, 8x ARINC 429 TX Ch	15x ARINC 429 RX Ch, 15x ARINC 429 TX Ch
DAC Channels	N/A	N/A	7x DAC	N/A	N/A
ADC Channels	N/A	N/A	12x ADC	N/A	N/A
Discrete I/O	4x GPIO and PRST, 15x Discrete 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out	4x GPIO and PRST; 20x Discrete 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out	4x GPIO and PRST; 20x Discrete 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out	4x GPIO and PRST, 8x Discrete 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out	4x GPIO and PRST, 8x Discrete 12x HL Discrete (SE) In; 8x HL Discrete (SE) Out; 12x Discrete (DIFF) In/Out
Other I/O	2x IRIG In/Out	2x IRIG In/Out	2x IRIG In/Out	2x IRIG In/Out	2x IRIG In/Out
Power Dissipation	40W (max.)	36W (max.)	37W (max.)	43W (max.)	38W (max.)
Order Number	920-100834-010	920-100834-011	920-100834-012	920-100834-013	920-100834-014

\* Contact factory for additional modification options. SE = Single Ended, HL = High Level, DIFF = Differential, PRST = Pushbutton Reset

## Environmental Table

QUALIFICATION TEST	LEVEL(S)	PROCEDURE
High Temperature Operational	+71°C	Paragraph 4.5.2 of RTCA/DO-160F
Low Temperature Operational	-40°C	Paragraph 4.5.4 of RTCA/DO-160F
High Temperature Storage	+100°C	Paragraph 4.5.3 of RTCA/DO-160F
Low Temperature Storage	-50°C	Paragraph 4.5.1 of RTCA/DO-160F
Temperature Variation	-40°C to +71°C	6 Cycles, Operating, Standard GE Procedure
Temperature/Altitude	-40°C to +71°C at 15,000ft	Operational Test, Standard GE Procedures
Random Vibration	0.1g <sup>2</sup> /Hz, 15-1000Hz; 6dB/octave decrease, 1000-2000Hz	MIL-STD-810F, Method 514.5, Procedure 1 (fixed wing, jet)
Shock	40g SRS	MIL-STD-810G, Procedure 1
Relative Humidity	240 hours, 95% non-condensing	RTCA/DO-160E Procedure 6, Category B
EMI	CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, and RS103	MIL-STD-461F
Power (Holdup is not available)		MIL-STD-704F

Qualification test reports are available upon request

# CRS-C3P-3CB1 COTS Rugged System

## Specifications: All Systems

### Processor

- Freescale MPC7448 @ 1.0 GHz

### SBC RAM

- 512 MB with ECC

### SBC Flash Memory

- 256 MB

### Operating System

- VxWorks 6.7

### Cooling

- Base plate cooled

### Form Factor

- 3U CPCI

### Slots

- 3

### Dimensions (H x W x D, excludes connectors)

- 5.60 x 4.25 x 8.76 (inches); 142 x 108 x 223 (mm)

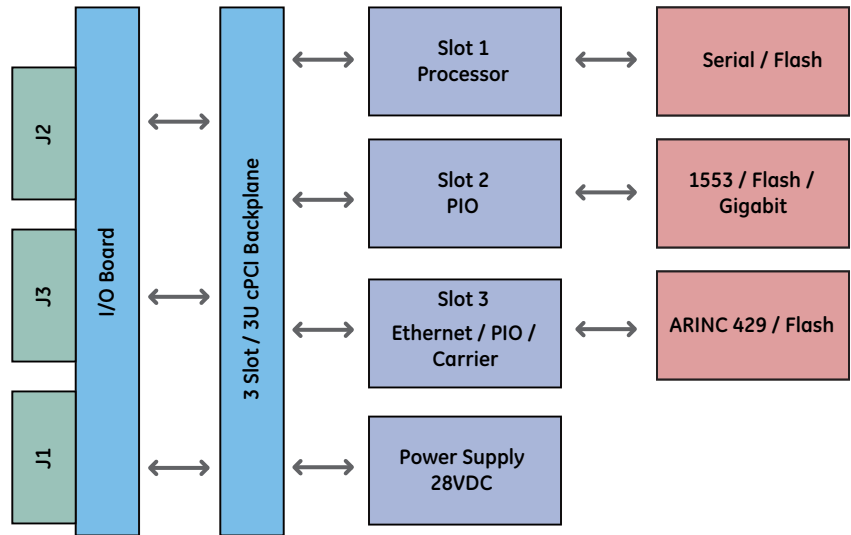
### Weight

- ~9 lbs (~4 kg)

### Input Power

- 28VDC nominal

## Block Diagram



## About GE Intelligent Platforms

GE Intelligent Platforms is a division of GE that offers software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil and gas, government and defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information, visit [www.ge-ip.com](http://www.ge-ip.com).

## GE Intelligent Platforms Contact Information

Americas: **1 800 433 2682** or **1 434 978 5100**

Global regional phone numbers are listed by location on our web site at [www.ge-ip.com/contact](http://www.ge-ip.com/contact)

[defense.ge-ip.com/systems](http://defense.ge-ip.com/systems)

