



CRS-C4P-3CC2 COTS Rugged System

Convection Cooled 3U CompactPCI Application Ready Computer

Features

- Rugged convection cooled chassis
 - 4 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
 - CAN Bus
 - Discrete
- Designed for manned and unmanned aerial, sea-going and ground vehicles

GE Intelligent Platforms' CRS-C4P-3CC2 COTS Rugged System is a packaged pre-validated 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-C4P-3CC2 Application Ready computer system can be deployed in the field as soon as your application is ready, or use the CRS-C4P-3CC2 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-C4P-3CC2 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-C4P-3CC2 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-C4P-3CC2 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 following pages illustrate a subset of the configurations that are available with this system. If you are interested in additional configuration options please contact your sales representative.



CRS-C4P-3CC2 COTS Rugged System

STANDARD CONFIGURATIONS*	CRS-C4P-3CC2-00	CRS-C4P-3CC2-01	CRS-C4P-3CC2-02	CRS-C4P-3CC2-03
Additional Memory (Flash, SSD, etc.)	NA	SATA - 64 GB	NA	NA
Ethernet Ports	9x 10/100/1000BaseT	1x 10/100/1000BaseT	1x 10/100/1000BaseT	1x 10/100/1000BaseT
Serial Ports	1x RS232/422	1x RS232/422	1x RS232/422 12x RS232/422/485	1x RS232/422
USB Ports	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0
MIL-STD-1553 Channels	NA	1x MIL-STD-1553 Redundant Ch	1x MIL-STD-1553 Redundant Ch	1x MIL-STD-1553 Redundant Ch
ARINC 429 Channels	NA	13x ARINC 429 RX Ch 15x ARINC 429 TX Ch	15x ARINC 429 RX Ch 15x ARINC 429 TX Ch	15x ARINC 429 RX Ch 15x ARINC 429 TX Ch
DAC Channels	NA	NA	NA	NA
ADC Channels	NA	NA	NA	NA
CAN Bus	NA	NA	NA	2x CANbus Ch
Discrete I/O	4x GPIO+PRST	4x GPIO+PRST 15x Discrete Ch 12x HL Discrete(SE) In 8x HL Discrete (SE) Out 10x Discrete (DIFF) In/Out	4x GPIO+PRST 14x Discrete Ch 8x HL Discrete(SE) In 4x HL Discrete (SE) Out 2x Discrete (DIFF) In/Out	4x GPIO+PRST 14x Discrete Ch 12x HL Discrete(SE) In 8x HL Discrete (SE) Out 8x Discrete (DIFF) In/Out
Other I/O	NA	2x IRIG In/Out	2x IRIG In/Out	2x IRIG In/Out
Power Dissipation (W)	54W	37W	39W	38W
Order Number	920-100844-000	920-100844-001	920-100844-002	920-100844-003

STANDARD CONFIGURATIONS*	CRS-C4P-3CC2-04	CRS-C4P-3CC2-05	CRS-C4P-3CC2-06	CRS-C4P-3CC2-07
Additional Memory (Flash, SSD, etc.)	NA	NA	NA	NA
Ethernet Ports	9x 10/100/1000BaseT	1x 10/100/1000BaseT	9x 10/100/1000BaseT	1x 10/100/1000BaseT
Serial Ports	1x RS232/422	1x RS232/422 2x RS232 or 1x RS422/485	1x RS232/422 12x RS232/422/485 1x RS232	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
MIL-STD-1553 Channels	1x MIL-STD-1553 Redundant Ch 1x RT_ADDR	1x MIL-STD-1553 Redundant Ch 1x RT_ADDR	NA	NA
ARINC 429 Channels	10x ARINC 429 RX Ch 15x ARINC 429 TX Ch	10x ARINC 429 RX Ch 15x ARINC 429 TX Ch	NA	NA
DAC Channels	NA	6x DAC Ch	NA	6x DAC Ch
ADC Channels	NA	5x ADC Diff Ch	NA	5x ADC Diff Ch
CAN Bus	NA	NA	2x CANBus Ch	2x CANBus Ch
Discrete I/O	4x GPIO+PRST 12x Discrete Ch** 2x Discrete (DIFF) In/Out	4x GPIO+PRST 8x GPIO 12x Discrete Ch**	4x GPIO+PRST 8x Discrete Ch 8x HL Discrete(SE) In 4x HL Discrete (SE) Out 8x Discrete (DIFF) In/Out	4x GPIO+PRST 8x GPIO 8x Discrete Ch 8x HL Discrete (SE) In 4x HL Discrete (SE) Out 6x Discrete (DIFF) In/Out
Other I/O	2x IRIG In/Out	2x IRIG In/Out	NA	NA
Power Dissipation (W)	68W	38W	64W	34W
Order Number	920-100844-004	920-100844-005	920-100844-006	920-100844-007

CRS-C4P-3CC2 COTS Rugged System

STANDARD CONFIGURATIONS*	CRS-C4P-3CC2-08	CRS-C4P-3CC2-09	CRS-C4P-3CC2-10	CRS-C4P-3CC2-11
Additional Memory (Flash, SSD, etc.)	SATA - 64 GB	NA	NA	CompactFlash Carrier - 4 GB
Ethernet Ports	1x 10/100/1000BaseT	1x 10/100/1000BaseT	9x 10/100/1000BaseT	1x 10/100/1000BaseT
Serial Ports	1x RS232/422 12x RS232/422/485	1x RS232/422	1x RS232/422	1x RS232/422
USB Ports	1x USB 2.0	1x USB 2.0	1x USB 2.0	1x USB 2.0
MIL-STD-1553 Channels	1x MIL-STD-1553 Redundant Ch 1x RT_ADDR	1x MIL-STD-1553 Redundant Ch 1x RT_ADDR	1x MIL-STD-1553 Redundant Ch 1x RT_ADDR	1x MIL-STD-1553 Redundant Ch
ARINC 429 Channels	NA	NA	NA	15x ARINC 429 RX Ch 15x ARINC 429 TX Ch
DAC Channels	NA	6x DAC Ch	NA	NA
ADC Channels	NA	5x ADC Diff Ch	NA	NA
CAN Bus	2x CANBus Ch	2x CANBus Ch	2x CANBus Ch	NA
Discrete I/O	4x GPIO+PRST 20x Discrete Ch** 8x HL Discrete(SE) In 8x HL Discrete (SE) Out 8x Discrete (DIFF) In/Out	12x GPIO+PRST 12x Discrete Ch** 8x HL Discrete(SE) In 4x HL Discrete (SE) Out 8x Discrete (DIFF) In/Out	4x GPIO+PRST 12x Discrete Ch** 8x HL Discrete(SE) In 4x HL Discrete (SE) Out 8x Discrete (DIFF) In/Out	4x GPIO+PRST 14x Discrete Ch 12x HL Discrete(SE) In 8x HL Discrete (SE) Out 8x Discrete (DIFF) In/Out
Other I/O	1x IRIG In/Out	1x IRIG In/Out	1x IRIG In/Out	2x IRIG In/Out
Power Dissipation (W)	36W	35W	64W	36W
Order Number	920-100844-008	920-100844-009	920-100844-010	920-100844-011

STANDARD CONFIGURATIONS*	CRS-C4P-3CC2-12	CRS-C4P-3CC2-13	CRS-C4P-3CC2-14
Additional Memory (Flash, SSD, etc.)	CompactFlash Carrier - 4 GB	SATA - 64 GB	NA
Ethernet Ports	1x 10/100/1000BaseT	3x 10/100/1000BaseT	3x 10/100/1000BaseT
Serial Ports	1x RS232/422	1x RS232/422	1x RS232/422 12x RS232/422/485
USB Ports	1x USB 2.0	1x USB 2.0	1x USB 2.0
MIL-STD-1553 Channels	1x MIL-STD-1553 Redundant Ch 2x RT_ADDR	1x MIL-STD-1553 Redundant Ch	NA
ARINC 429 Channels	NA	15x ARINC 429 RX Ch 15x ARINC 429 TX Ch	NA
DAC Channels	NA	NA	6x DAC Ch
ADC Channels	NA	NA	5x ADC Diff Ch
CAN Bus	2x CANBus Ch	NA	NA
Discrete I/O	4x GPIO+PRST 6x Discrete Ch** 12x HL Discrete(SE) In 8x HL Discrete (SE) Out 12x Discrete (DIFF) In/Out	4x GPIO+PRST 4x Discrete Ch 12x HL Discrete(SE) In 8x HL Discrete (SE) Out 8x Discrete (DIFF) In/Out	4x GPIO+PRST 8x GPIO 8x HL Discrete (SE) In 4x HL Discrete (SE) Out 6x Discrete (DIFF) In/Out
Other I/O	1x IRIG In/Out	2x IRIG In/Out	NA
Power Dissipation (W)	34W	43W	39W
Order Number	920-100844-012	920-100844-013	920-100844-014

* Contact factory for additional modification options.

**An additional 6 discrete channels are available for each of the RT_ADDR channels not used. SE = Single Ended, HL = High Level, DIFF = Differential, PRST = Pushbutton Reset

CRS-C4P-3CC2 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

- Convection cooled

Form Factor

- 3U CPCI

Slots

- 4

Dimensions (H x W x D, excludes connectors)

- 4.90 x 4.66 x 8.39 (inches); 125 x 118 x 213 (mm)

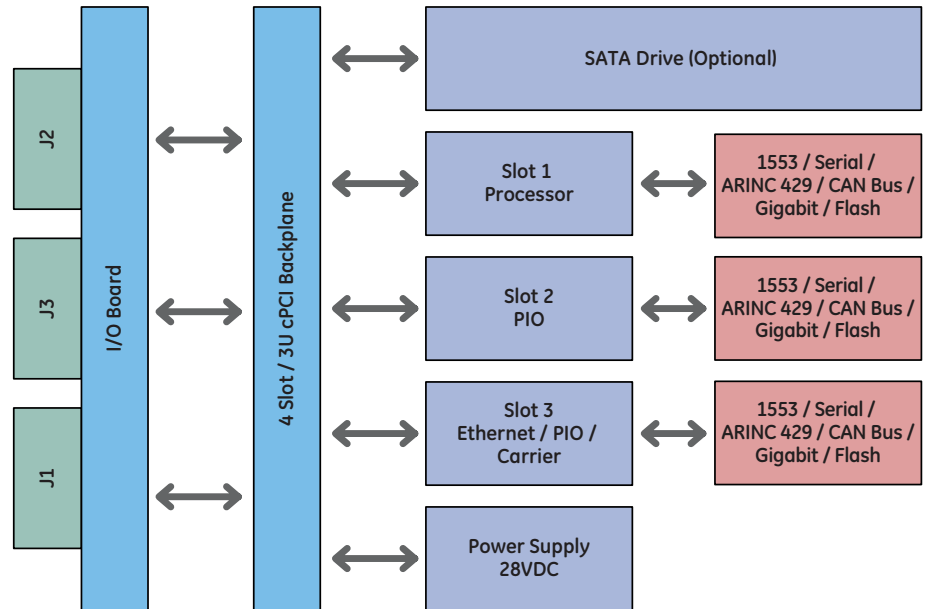
Weight

- ~10 lbs (~4.5 kg)

Input Power

- 28V DC nominal

Block Diagram



Environmental Table

QUALIFICATION TEST	LEVEL(S)	PROCEDURE
High Temperature Operational	+50°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 +50°C	6 Cycles, Operating, Standard GE Procedure
Temperature/Altitude	+35°C at 30,000ft	Operational Test, Standard GE Procedures
Random Vibration	0.1g ² /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

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

defense.ge-ip.com/systems

