COTS DAL Certifiable BuiltSAFE Building Blocks

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Mercury Mission Systems' expertise and experience in Design Assurance Level (DAL) safety certifiable solutions has been built on successful execution on dozens of programs over three decades. This domain knowledge is the foundation of our safety-certifiable BuiltSAFE modules, systems and software for avionics, communications, video servers and mission computing. Our latest rugged, safety certifiable building blocks have backwards compatibility and are designed with a top-down approach for interoperability and ease of pre-integration.

Chassis

Rock-2
(OpenVPX)

ROCK-2A
(OpenVPX)

SBC (Single Board Computers)

CIO5-2040
(OpenVPX)

Dual Intel 5th Gen Core i7 E5860EQ Iris Pro GPU, 32GB DDR3, 64GB Flash, PCIe switch
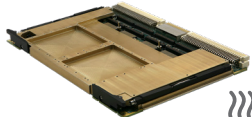
CIOV-2231
(OpenVPX)

Intel 5th Gen Core i7-5850EQ with Iris Pro GPU, 16GB DDR3, 32GB SSD, on-board PCIe Switch

MFCC-8570
(XMC Mezzanine)

Intel 5th Gen i7 Quad-Core, PCIe gen 2 & 3, 8GB DDR3

RIO6-8092
(VME 64x)

NXP QorIQ P2020 & FPGA User-Programmable I/O, 1GB DDR3, 2GB NAND, 2x PMC/XMC

RIO6-8093
(VME 64x)

NXP QorIQ P2020 & FPGA User-Programmable I/O; 1GB DDR3, 2GB NAND, 2x PMC / XMC sites

MFCC-8556
(PMC/XMC Mezzanine)

NXP QorIQ P2020 & Xilinx Spartan-6; 2GB DDR3, 2GB NAND

RIOV-2473
(OpenVPX)

NXP QorIQ P3041/P4080/P5020, 8GB DDR3, 2GB NAND, 2x 10GbE
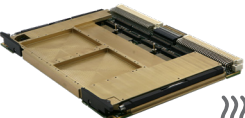
RIOV-2478
(OpenVPX)

NXP QorIQ P3041/P4080, 4GB DDR3, 2GB NAND; 1x XMC Site

MFCC-8557
(XMC Mezzanine)

NXP QorIQ P3041; 4GB DDR3L, 2GB NAND, x4 PCIe Mesh Support Safety Certifiable up to DAL-C (DO-178C/254)
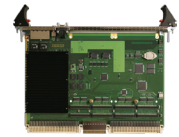
RIO6-8096
(VME 64x)

NXP QorIQ P2010 & FPGA User-Programmable I/O, 256MB DDR3, 2GB NAND, 2x PMC/XMC

MFCC-8550
(PMC/XMC Mezzanine)

NXP QorIQ P2020 & Xilinx Spartan-6; 512MB DDR3, 2GB NAND

RIO4-8072
(VME 64x)

NXP MPC7448, FPGA User-Programmable I/O Lines, 256/512MB DDR2, 128MB NAND, 2x PMC Sites

MFCC-8558
(XMC Mezzanine)

NXP QorIQ T2080; 4GB DDR3L, 4GB NAND Safety Certifiable up to DAL-C (DO-178C/254)

BuiltSAFE™

Mercury's BuiltSAFE™ products deliver the highest level of flight safety assurance to aerospace and defense applications. Our proven, reusable Design Assurance Level (DAL) certified artifacts for mission computing, avionics, networking and datalink comms processing save time and cost while decreasing risk.

✻ Air-cooled   ⧓ Conduction-cooled   ◎ Highest DAL
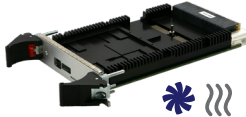
Differentiated Software

Mercury provides the most comprehensive suite of software on all our boards. Our BSPs, include certifiable boot and data loaders, certifiable and continuous BIT and board level health-monitoring to reduce system integration development time and risk.

Our safety certifiable graphics libraries are available for CPUs and GPUs. Mercury BuiltSAFE Multi-Core Renderer runs on one or more CPU cores and is certifiable to the highest DAL levels. BuiltSAFE OpenGL Libraries run on GPUs for the highest graphics performance in a certifiable system.

Video and Graphics

VCP-2864
(OpenVPX)

Video Frame Grabber, Xilinx Kintex-7, 256MB DDR3, 1x XMC Site

VCP-8166
(PMC/XMC Mezzanine)

H264/AVC Video Encoder

VGP-2870
(OpenVPX)

Video Processing Module, AMD Radeon E8860, 2GB GDDR5, 256MB DDR3; Safety Certifiable up to DAL-C (DO-178C/254)
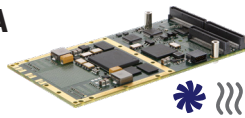
VCP-8162
(XMC Mezzanine)

Video Frame Grabber, Xilinx Virtex-5, 512MB DDR2, 1x XMC Site

VCP-8166MA
(PMC/XMC Mezzanine)

Video Capture Encoder Decoder, MPEG-2 Codec
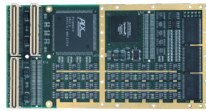
VPP-8112
(XMC Mezzanine)

Video I/O and Processor TI DaVinci, ARM Cortex-A8 (1.0GHz), 512MB DDR3, 1GB NAND

I/O (Input/Output)

ARINC-8429
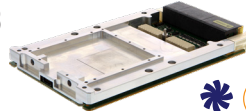*(PMC Mezzanine)*

ARINC429 32x Channel PMC Module Safety-Certifiable driver (DO-178B) DAL-A

AVIO-2353
(OpenVPX)

Multi I/O Avionics Interface Module, 2x Mil Std 1553, 16x ARINC429, 10x Serial IO Designed for DAL-C (DO-178C/DO-254) certification

RSL-5222
(PMC Mezzanine)

Serial I/O Controller PMC, 4x-8x configurable embedded RS-232/422/485 serial interfaces

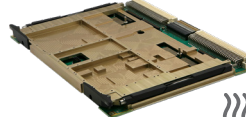## Carriers

CB3P-6231
(OpenVPX)

PMC/XMC Carrier Board, with 32 lane PCIe Gen 3 Switch
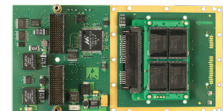
ISC-8422
(VME 64x)

Dual PMC/XMC Carrier Board, with PCIe to PCI/PCI-X bridge/switch
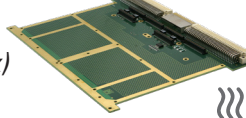
Storage

FDISK-8432
(XMC Mezzanine)

Flash Disk Storage Module, with ECC Protection, 256GB High Throughput

PEB-6426
(6U VME 64x)

User-Programmable Carrier with 32x - 48x user-specific I/O lines, 2x PMC/PrPMC sites

PEB-6416
(VME 64x)

Dual PMC Carrier Board, with User Programmable I/O interfaces

Services

Our in-house flight safety certification experts are available to provide certification services for hardware, software, and systems. We have extensive European Aviation Safety Agency (EASA), Federal Aviation Agency (FAA), Joint Aviation Authorities (JAA) and Transport Canada experience and a wide portfolio of building blocks, interfaces, software and safety certifiable fabrics/buses, making Mercury solutions the lowest risk.

Innovation That Matters.

INNOVATION THAT MATTERS ™