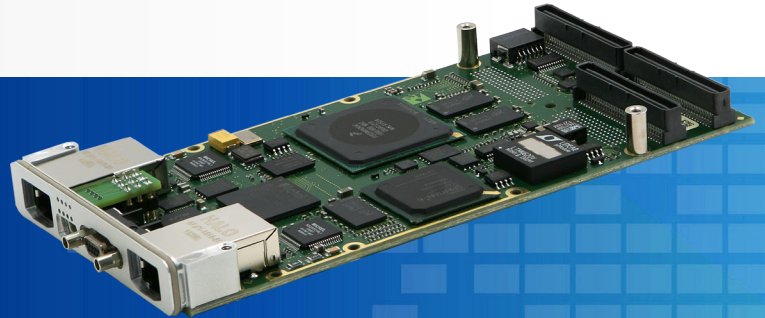


BuiltSAFE™ MFCC-8550

PrPMC/PMC Air-cooled Freescale QorIQ P2 processor module

- Freescale® QorIQ® P2020 processor
- Xilinx Spartan®-6 LXT user-programmable FPGA
- Advanced Board Management Controller (aBMC)
- Commercial Air-Cooled packaging



Mercury's BuiltSAFE™ products bring 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

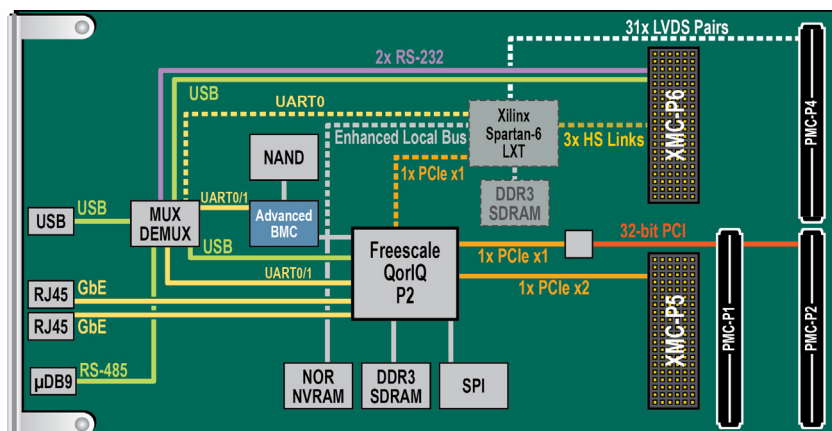
The BuiltSAFE MFCC-8550 is an air-cooled PMC/XMC processor module for ground applications. It is designed for the most demanding applications requiring high compute capabilities.

The MFCC-8550 combines a fast, dual-core, multi-function PowerPC processor, high-speed links and bridging (PCIe, Gigabit Ethernet) with a programmable FPGA for application development.

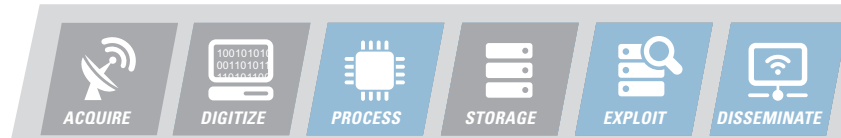
An Advanced Board Management Controller (aBMC) is implemented for configuration management, event logging and other supporting tasks. It monitors and controls the system continuously, ensuring reliability and safety even in the case of failure conditions

BuiltSAFE for Avionics

Mercury's expertise and experience in safety certifiable solutions has been built on successful execution of dozens of programs over three decades. This domain knowledge is the foundation of our BuiltSAFE portfolio of open architecture modules, systems and software for avionics, communications, video servers, and mission computing.



Mercury Systems is a leading commercial provider of secure sensor and mission processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



Technical Specifications

Compliance

PrPMC: VITA 20, VITA 32

XMC: VITA 42

Power Consumption

| Minimum | typical | maximum | units |
|---------|---------|---------|-------|
| - | 8 | 12* | Watts |

* Without user FPGA functionality

Processor

Freescale QorIQ P2020 (2 cores) @ 1.2 GHz

Memory

512 MB DDR3 SDRAM @ 6.4 GB/s peak with ECC protection

2 GB Flash (NAND)

128 MB Flash (NOR)

256 KB NVRAM

User-Programmable FPGA/User I/O Lines

Xilinx Spartan-6 LXT FPGA with 128 MB DDR3 SDRAM

31x user-specific LVDS pairs (six pairs clock capable) on PMC-P4

Buses

1x 32-bit PCI 3.0 bus at 33/66 MHz on PMC-P1/P2 ^(G) ^(I)

Links/Connections

1x PCIe x2 on XMC-P5 (VITA 42.3) ^(H) ^(I)

3x high-speed links on user-programmable FPGA to XMC-P6 ^(H) ^(I)

2x 1000Base-T on RJ-45 connectors

1x USB 2.0 host/device on XMC-P6 connector

1x USB 2.0 host/device on mini USB connector

1x RS-485 on μ DB9 connector

2x RS-232 on XMC-P6 connector

(G) Applies to "G" model

(H) Applies to "H" model

(I) Applies to "I" model

Advanced Board Management Controller

CPU speed control logic

Advanced power management

Voltage and current monitoring

Temperature monitoring (thermal sensors on critical positions)

Advanced error reporting and logging

Development/Debug

Onboard JTAG test port

Ruggedization Levels

| Level | Description | Cooling Type | Operating Temperature | Vibration (1 hour per axis) | Operating Shocks |
|-------|---------------|--------------|-----------------------|---|---------------------------------|
| A1 | Commercial AC | Forced Air* | 0°C to 55°C [AC1] | 5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.04 g ² /Hz, 1000-2000Hz: decrease at 6 dB/octave | 20g, 11ms saw-tooth, three axes |

* The required air-flow is defined separately for each product

Environmental Specifications

| Condition | Limits, standards | Comments |
|---------------------------|-----------------------|-------------------------------|
| Non-operating temperature | -55°C to 105°C [C4] | |
| Humidity | 95% | |
| Altitude | -1,500 to 60,000 feet | May require conformal coating |
| Fungus resistance | No nutrient materials | |
| Workmanship | IPC-A-160 class 3 | |
| Soldering | IPC J-STD-001 class 3 | |
| PCB Manufacturing | IPC-A-600 class 3 | |
| Conformal coating | IPC-CC-830 | Optional |
| Materials | REACH compliant | ROHS variants as an option |
| Flammability | UL 94 Class V-0 | |
| Quality | EN 9100:2008 | |

Product Ordering

| | |
|-------------|---|
| MFCC-8550GF | Air-cooled PrPMC with QorIQ P2020 @ 1.2 GHz, 512 MB DDR3, 2 GB NAND, 128 MB NOR, 256 KB NVRAM, Spartan-6 LXT with 128 MB DDR3 |
| MFCC-8550HF | Air-cooled XMC with QorIQ P2020 @ 1.2 GHz, 512 MB DDR3, 2 GB NAND, 128 MB NOR, 256 KB NVRAM, Spartan-6 LXT with 128 MB DDR3 |
| MFCC-8550IF | Air-cooled PrPMC/XMC with QorIQ P2020 @ 1.2 GHz, 512 MB DDR3, 2 GB NAND, 128 MB NOR, 256 KB NVRAM, Spartan-6 LXT with 128 MB DDR3 |
| OWW-36410A | VxWorks [®] BSP for MFCC-8550/56 |
| OWW-36410E | VxWorks 653 BSP for MFCC-8550/56 |
| OWX-36410L | Linux [®] Toolbox for MFCC-8550/56 |

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