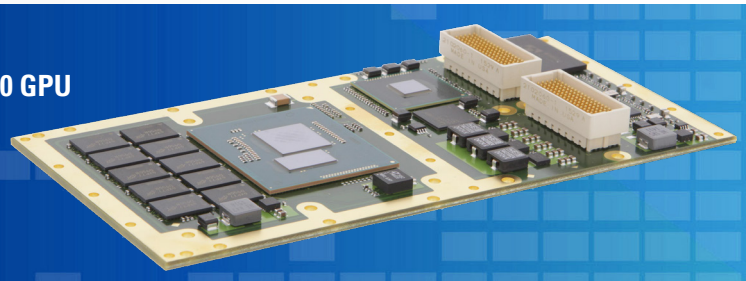
DATASHEET

BuiltSAFE™ MFCC-8570

Intel Core™ i7 Gen 5 Processor XMC

- **Intel® Core™ i7 Gen5 processor with Iris™ Pro Graphics 6200 GPU**
- **Serial interfaces RS232/422/485**
- **Up to 6 user GPIOs**
- **Trusted Platform Module (TPM)**
- **Rugged conduction-cooled package**

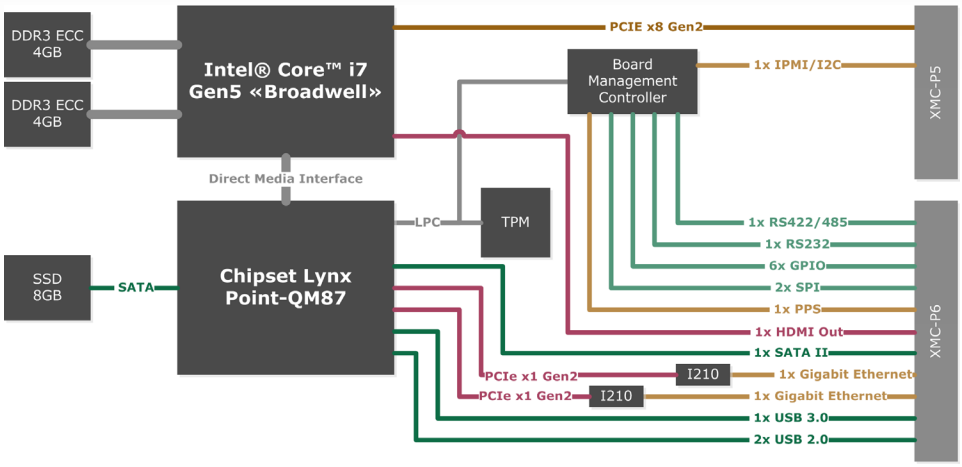


Mercury's BuiltSAFE™ products bring the highest level of flight safety assurance to aerospace and defense applications. Our proven, reusable Design Assurance Level (DAL) certified artifacts for mission computing, avionics, networking and datalink comms processing save time and cost while decreasing risk.

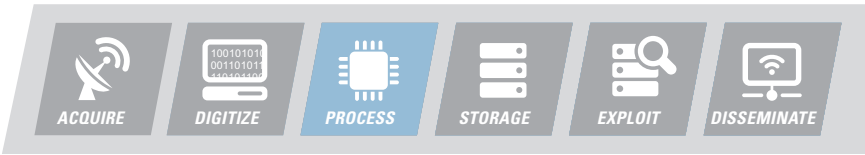
The BuiltSAFE™ MFCC-8570 is an XMC mezzanine powered by an Intel Quad Core i7 Gen 5 dual-threaded (8-threads) processor (Broadwell microarchitecture). Protected for rough deployment within a rugged conduction-cooled package, these mezzanines are ideally suited to data/graphics-intensive applications.

Built for processing-intensive, data-intensive and graphic-intensive applications

The Intel Iris Pro Graphics 6200 GPU is embedded in the Core™ i7 processor to offer high-performance, advanced GPU functions and may be applied to GPGPU tasks using OpenCL™. The BuiltSAFE™ MFCC-8570 embeds 8GB of DDR3 ECC memory (25.6GB/s throughput) and 8GB of on-board SATA flash memory enabling applications to generate and/or process large amount of data.



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.



www.mrcy.com

Technical Specifications

Compliance

XMC PCIe (VITA 42.3), XMC 2.0 (VITA 61)

XMC VPWR +12V

XMC Signal mapping to Open VPX (VITA 46.9)

P2w1-X24s+X8d+X12d on XMC-P6

Power Consumption

35Watts typical [1]

Processor

Intel Core i7 Gen5 (5850EQ) @ 2.7GHz (Turbo boost @ 3.4GHZ)

Quad-Core, dual-threaded (8-threads total) Broadwell microarchitecture

Memory (other options available)

8GB of DDR3 ECC (with 25.6GB/s throughput)

8GB of on-board SSD[2]

And 8GB of on-board SATA flash memory

I/Os

Expansion links

PCIe Gen2 x8 on XMC-P5[3]

High speed links

2x Gigabit Ethernet 1000Base-KX on XMC-P6

1x USB 3.0 on XMC-P6

1x SATA 2.0 on XMC-P6

Video out

HDMI on XMC-P6

Others[4]

2x USB 2.0

1x RS-232

1x RS-422/485

6x user GPIO

2x SPI on XMC-P6

1x PPS on XMC-P6

Environmental Specification

Level	Description	Cooling Type	Operating Temperature	Vibration (1 hour per axis)	Operating Shocks
C4	Extended range CC	Conduction	-40°C to 85°C [CC4]	5-100 Hz: increase at 3 dB/ octave, 100-1000 Hz: 0.1 g^2/Hz, 1000-2000Hz: decrease at 6 dB/octave	40g, 11ms saw-tooth, three axes

Board Management

Built-In-Test (Bios and software)

Temperature monitoring (thermal sensors on critical positions)

Watchdog (short and long period)

Error reporting

Reset management

Consumption monitoring

Voltage monitoring

1x I2C with IPMI support on XMC-P5

Security Features

Non-volatile memory write protection

Trusted Platform Module (TPM)

Additional Features

Real Time Clock

Software

Yocto 2.0 BSP

Red Hat Enterprise Linux 7 BSP

Product Ordering and Options

MFCC-8570 3U OpenVPX Intel Core i7 Gen5 Single Board Computer

Memory 8GB SSD

XMC to VPX Signal Mapping

VITA 46.9

Environmental

-40°C to 75°C at thermal interface

Software

Linux® Yocto 2.0 BSP

Red Hat Enterprise Linux 7 BSP

PCIe

PCIe Gen2

PCIe Gen3[3]

XMC

VITA 42

VITA 61(5)

Related Hardware Products

ACS-6076 Forced air-cooled 4-slot payload 3U VPX sealed conduction-cooled enclosure (0.8", 0.85", 1" Pitch, 250 Watts) with MIL connectors

ROCK-2 3U OpenVPX, SWaP-optimized, rugged, modular, pre-qualified, COTS subsystems

(1) Power consumption is kept under 35W by controlling the processors frequency

(2) Other sizes available upon request

(3) PCIe Gen3 available on VITA 61 connectors upon request

(4) Please contact factory for other configurations

(5) Available upon request

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mercury systems™

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