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.
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**
35 Watts 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

**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**

- **Operating Temperature**
  -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(5)**

**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

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(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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