

# RFS1080 Radio Frequency System-in-Package (RF SiP)

*High frequency, direct-to-digital FPGA processing solution*

- Wideband direct-to-digital operation
- Industry-leading FPGA processing
- Configurable 2.5D system-in-package capability
- Defense-grade package and chip-level security integration



With more functionality, higher performance, and smaller form factor than traditional surface-mount boards, the Mercury RFS1080 RF SiP redefines the way sensors process information. This broadband, chip-scale solution enables multiple channels of direct digitization with industry-leading FPGA technology in a compact BGA package.

Customize with your optimal combination of RF and digital chiplets – integrated with dense, high-speed silicon interconnects – for a single packaged design to satisfy your program requirements.

## Features

- Integrated chiplets with vendor-agnostic architecture
- Open Systems Architecture at Chip Scale (OSA-CS) support
- Direct RF to digital, wideband ADC/DAC chiplets
  - VHF to Ku, wideband transceivers
  - Channel time alignment/synchronization support
  - ADC/DAC calibration
- Configurability via FPGA
- Optional integrated Mercury BuiltSECURE™ IP with secure boot support
- Digital interface transceivers support multiple communication protocols including Ethernet and PCIe
- 1-8GHz reference clock input

## Benefits

- Brings high performance RF and processing to the sensor edge, enabling low-latency data processing
- Up to 83% smaller, 64% lighter, 74% more efficient and 48% less expensive than next-generation board-level solutions
- Customizable to include third-party chiplets, typically in less than 12 months
- Manufactured in a DMEA-trusted facility

## SWaP Specifications

- Width: 1.97 in (50mm)
- Depth: 1.97 in (50mm)
- Height: 0.20 in (5mm)
- BGA Pitch: 0.04 in (1mm)
- Weight: < 40 g
- Power: 140W (typical)

## Board-Level Integration Support

In addition to offering chip-scale solutions, we leverage our mixed-signal module design expertise to provide a customized board solution for your specific application. Our standard product portfolio includes 3U and 6U OpenVPX and SOSA™ boards. Contact our technical team for an integrated RF SiP solution at [custom.microelectronics@mrcy.com](mailto:custom.microelectronics@mrcy.com).

## Rapid Customization

Through our heterogeneous integration technology, we can rapidly customize designs to include commercial as well as customer-supplied chiplets, including security, digital signal processing and many others.

### Custom Expertise

Interested in a trusted microelectronics design? Contact a Mercury expert now at [custom.microelectronics@mrcy.com](mailto:custom.microelectronics@mrcy.com) to get started.

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