mercury

Quartz 8257A
Switchless 3U VPX SOSA aligned development chassis for Quartz products

Development platform for Mercury's SOSA aligned RFSoC based boards

- Access to data and control planes provided through RTM
- 1-slot, small footprint chassis
- Rear panel access to RF I/O, 100 GigE and chassis manager
- Supports VITA 67.3C

The 8257A is a low-cost, SOSA aligned 3U VPX chassis ideal for developing applications on Mercury's 5550 or 5553 Quartz® RFSoC boards. Providing power and cooling to match the 5550 and 5553 in a small desktop footprint, the chassis allows access to all required interfaces on the 5550 and 5553 without the need for a larger, more expensive multi-slot chassis.

The 5550 features the Zynq UltraScale+ RFSoC Gen 1. The 5553 features the Zynq UltraScale+ RFSoC Gen 3.
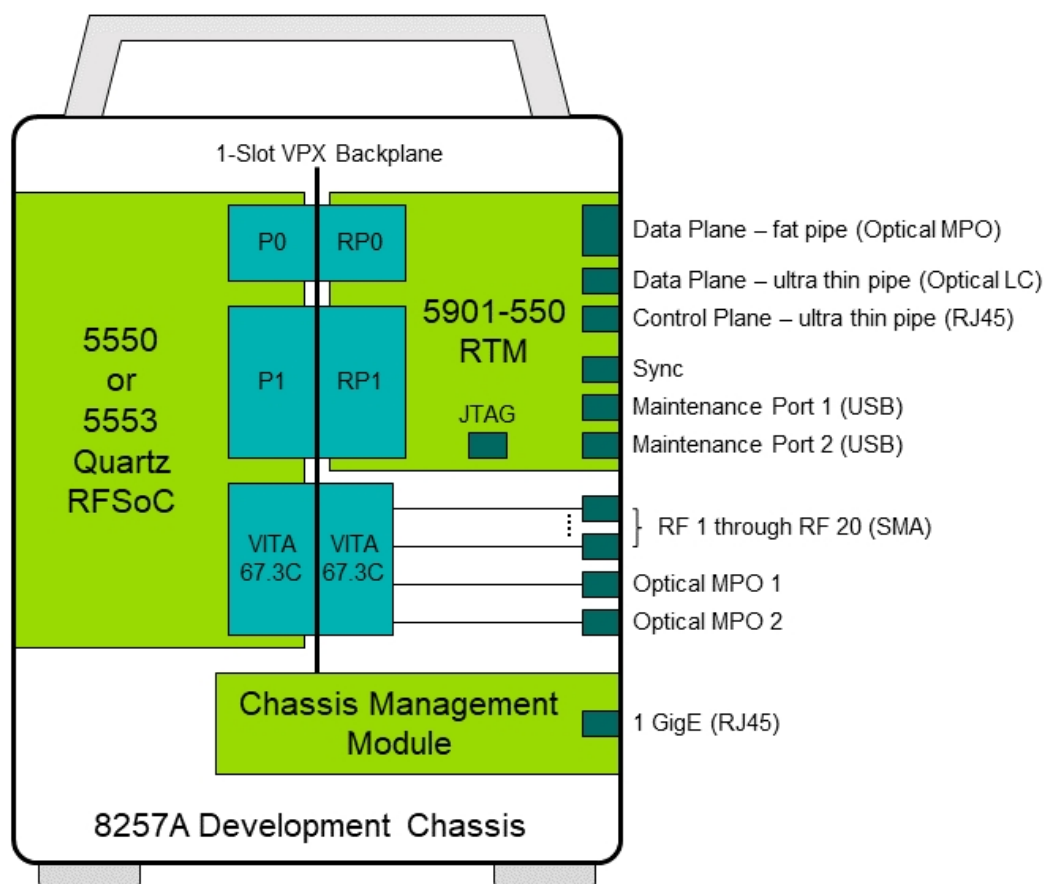
DEVELOPMENT ENVIRONMENT

Many SOSA aligned systems are deployed with custom backplanes specific to the interconnect requirements of the application. The 8257A allows IP and software developers immediate access to RFSoC hardware in a simple 1-slot backplane. This can accelerate development time while a custom SOSA backplane is being defined or manufactured.

The 8257A's built-in forced-air cooling is designed to support conduction-cooled boards in an air-cooled chassis. This provides the convenience of development on the conduction-cooled boards in a desktop or laboratory environment.

CHASSIS MANAGEMENT

Mercury's SOSA aligned development chassis utilizes Crossfield Technology LLC's VITA 46.11 and HOST aligned Chassis Management Module (CMM). This CMM is software upgradeable to the forthcoming SOSA v1.0 Technical Standard. The 8257A's CCM is an ideal platform for introducing developers to SOSA Out-of-Band System Management operation.

SOSA
Sensor Open Systems Architecture

1-Slot VPX Backplane

5550 or 5553 Quartz RFSoC

P0 RP0

P1 RP1

VITA 67.3C VITA 67.3C

5901-550 RTM

JTAG

Data Plane – fat pipe (Optical MPO)
Data Plane – ultra thin pipe (Optical LC)
Control Plane – ultra thin pipe (RJ45)
Sync
Maintenance Port 1 (USB)
Maintenance Port 2 (USB)
RF 1 through RF 20 (SMA)
Optical MPO 1
Optical MPO 2

Chassis Management Module

1 GigE (RJ45)

8257A Development Chassis

REAR TRANSITION MODULE

While conduction cooled chassis typically do not allow the use of a Rear Transition Module (RTM) for deployment, the 8257A supports the Model 5901-550 RTM for use during development. This RTM allows convenient access to the RFSoC board's Data Planes via optical interfaces and to the Control Plane through a standard RJ45 1 GigE interface, eliminating the need for a gigabit Ethernet switch card during development. In addition, two management ports, the multi-board sync interface, and a JTAG port are available on the RTM.

REAR ACCESS PANEL

The 8257A's rear panel features 20 SMA coaxial breakout connectors, providing direct connections to the VITA 67.3C's 20 RF backplane interfaces. For support of the RFSoC board's dual 100 GigE optical interfaces, two optical MPO connectors allow connections using standard optical cables. A RJ45 connector delivers a 1 GigE connection for chassis management.

SPECIFICATIONS

Rear Panel Connections:

- RF: 20 SMAs
- Gigabit Serial: 2 optical MPOs
- 1GigE: 1 RJ45

Dimensions: 192.8 mm W x 307.8 mm D x 425.5 mm H

Weight: 17.8 lb

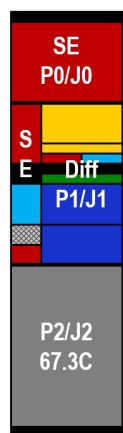Power Supply: 300 Watts

Operating Temp: 0° to +50° C

Storage Temp: –40° to +85° C

Relative Humidity: 5 to 95%, non-condensing

Power Requirements: 100 to 240 VAC, 50 to 60 Hz, 1000 W max.

OpenVPX Compatibility

The 8257A is compatible with the following module profile, as defined by the VITA 65 OpenVPX Specification: SLT3-PAY-1F1U1S1S1U2F1H-14.6.11-n

ORDERING INFORMATION

Model	Description
8257A	1- slot 3U VPX SOSA aligned development chassis for Quartz Products

Options	Description
–110	Dual MPO optical interfaces

Contact Mercury for compatible option combinations and complete specifications.

SOSA ALIGNED COMPANION PRODUCTS

Model	Description
5550	8-Channel A/D & D/A Zynq UltraScale+ RFSoC Processor
5553	8-Ch. A/D & D/A Zynq UltraScale+ RFSoC Gen 3 Processor
5560	Versal HBM ACAP Processor
5585	8-Channel A/D Virtex UltraScale+ HBM FPGA
5586	Virtex UltraScale+ HBM FPGA Co-Processor
5901-550	Rear Transition Module for 555x

ACCESSORY PRODUCTS

Model	Description
4811	Navigator FPGA Design Kit
4814	Navigator Board Support Package (BSP) for Linux
4815	Navigator Board Support Package (BSP) for Windows

LIFETIME SUPPORT FOR QUARTZ PRODUCTS

Mercury offers worldwide customers shorter development time, reliable, rugged solutions for a variety of environments, reduced costs, and mature software development tools. We offer free lifetime support from our engineering staff, which customers can depend on through phone and email, as well as software updates. Take advantage of our 40 years of experience in delivering high-performance radar, communications, SIGINT, EW, and data acquisition MIL-Aero solutions worldwide.

mercury

Corporate Headquarters

50 Minuteman Road
Andover, MA 01810 USA
+1 978.967.1401 tel
+1 866.627.6951 tel
+1 978.256.3599 fax

**International Headquarters
Mercury International**

Avenue Eugène-Lance, 38
PO Box 584
CH-1212 Grand-Lancy 1
Geneva, Switzerland
+41 22 884 5100 tel

Learn more
Visit: mrcy.com/go/MP8257A

For technical details, contact:
mrcy.com/go/CF8257A

MADE IN USA