



SOSA Aligned Development Platform

Simplify application development with Mercury's SOSA aligned Quartz RFSoc based boards

Speeding development is the prime objective of the Model 8256.

Customers can be up and running in short order because Mercury has taken many of the initial startup and configuration issues out of the equation. To reduce the development effort and risk, Mercury offers integration assistance to select and configure modules to meet overall system objectives.

ADVANCED FEATURES

- **Built-in forced-air cooling** is designed to support conduction-cooled boards in a standard 19-inch rackmount profile chassis. This provides the convenience of development on conduction-cooled boards in a desktop or laboratory environment.
- **Utilizes VITA 46.11 and HOST aligned Chassis Management Module (CMM).** SOSA aligned systems will feature, and the CMM will enable, meaningful integration between the functional elements (SOSA modules) and the System Manager, the CMM, and every Plug-In Card (PIC).
- **Convenient access to RF and optical interfaces.** Each RF payload slot can be optioned with 20 coaxial breakout connectors located on the back panel of the chassis, providing direct connections to the VITA 67.3C backplane connector. In addition, each RF payload slot can be optioned with two rear-panel MPO adapters to provide access to the VITA 67.3C dual optical interfaces.

PARTNERS INVOLVED IN PLATFORM DEVELOPMENT

Elma Electronic: Backplane and system management components

Interface Concept: Backplane switch modules

Concurrent Technologies: Single board computer modules

Crossfield Technology: Chassis Management Solutions (IPMI and CMM)

All of the above are designed to be SOSA aligned. Mercury's SOSA aligned products facilitate interoperability, re-use, and rapid technology insertion, all consistent with the SOSA Consortium's approach and vision.

SOSA
ALIGNED

Quartz RFSoc Board

DEVELOPMENT SYSTEM

Chassis Management Module

VITA 46.11, HOST ALIGNED

Forced-Air Cooling

SUPPORTS CONDUCTION-COOLED BOARDS

Optical Interface

OPTIONAL, VITA 67.3C

Demo System: An Elma chassis with Crossfield Technology Chassis Management Solutions (IPMI and CMM), two single-board computers (SBCs) from Concurrent Technology, and one Quartz® RFSoc based board (Model 5550).

CHASSIS MANAGEMENT AND QUERYING THE CARDS

Under a Navy contract, Georgia Tech Research Institute (GTRI) was instrumental in developing the Hardware Open Systems Technology (HOST) architecture to implement and add features to IPMI management utilizing the VITA 46.11 system management specification.

The PC is running an application developed by GTRI to implement a standardized way to verify conformance to the HOST system management definition. The application, called System Management User Interface (SMUI), uses JSON file types specifying the IP address of the chassis management server, the occupied slots in the chassis, and the various tests that are required.

The Crossfield chassis manager responds to the SMUI’s Remote Management Control Protocol (RMCP) requests to query the various plug-in cards for their FRU and SDR records as well as their onboard sensor data. When the SMUI detects the cards, they are displayed as connected boxes (as shown in the second image). You can click on a box for more information.

The third image shows the boxes that appear when the Quartz RFSoc board is selected: FRU Record, SDR Repository, Device SDR, SEL, Sensors, and PEF and LAN Parameters. Clicking on FRU Record displays details such as model and serial number, and production date.

ACQUIRING AND VIEWING SIGNAL DATA

The SOSA aligned Quartz RFSoc board (Model 5550) acquires signal data and sends it through the SOSA data plane, 40 Gigabit Ethernet through a SOSA aligned network switch, to a SOSA aligned single-board computer. The SBC is connected to a display of the signal data (in time and frequency) provided by the Signal Viewer of the Navigator BSP (Board Support Package). The Navigator BSP provides software support for Quartz RFSoc boards.

