SIU35 Application

Launch Abort System Test: Ascent Abort-2

NASA successfully launched the final test of Orion's Launch Abort System (LAS) before human missions on July 2, 2019. The LAS allows for rescue of the crew in the unlikely event of a catastrophic malfunction while the spacecraft is sitting on the launch pad or on its way into orbit. Reaching speeds up to 600 miles per hour, the LAS test demonstrated a successful abort under the highest aerodynamic loads it will experience in flight. It is necessary for the Flight Test Article to detect and communicate the abort event to the LAS and steer the LAS during the abort sequence.

The Ascent Abort-2 (AA2) test launched an Orion mockup from Space Launch Complex 46 in Cape Canaveral, Florida and tested the LAS and its three monitors.

NASA selected NAI's Rugged Sensor Interface Unit (SIU35) for the AA-2 test system's Avionics Flight Computer (FC) Chassis and I/O scheme. Two identical FCs are located within the Crew Module mockup and work with the overall Avionics system to provide the majority of I/O functionality. NAI's rugged Configurable Open Systems Architecture™ (COSA®) allowed NASA the flexibility to move forward with hardware decisions before knowing the final requirements, including I/O changes, and deliver an early functional prototype solution. North Atlantic's I/O modules provide a variety of functionality such as Serial Communications, Discrete I/O, and RTD measurement. The SIU35 uses an Internal NAI COTS 150 W, 28 VDC input power supply that meets MIL-STD-704A, MIL-STD-1275D and provides 50 milliseconds of holdup.

"The NASA AA2 Test Flight was a great launch and awesome to be a part of," explains Luke Rice, Jacobs Deputy Project Manager. "As far as engineering performance is concerned, data reviews thus far indicate nominal performance before and during flight

Rugged Enclosure with 38999 connectors, 3U VPX I/O cards and 3U VPX Power Supply

Product Information
- SIU35
- Power Supply
- Function Modules
  - Discrete I/O
  - Serial Communication
  - RTD Measurement

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Rev. A