

NOVA

INTEGRATION SOLUTIONS

**RUGGED ELECTRONIC ENCLOSURES, CHASSIS AND PRINTERS FOR
MILITARY/AEROSPACE AND HIGH-RELIABILITY INDUSTRIAL APPLICATIONS**

CORPORATE CAPABILITIES GUIDE



RUGGED COTS CHASSIS



ATR CHASSIS



COTS CHASSIS

COMPANY OVERVIEW

NOVA Integration Solutions (NIS) specializes in the design, manufacture, test/validation, and system integration of highly specialized ATR, COTS / Industrial COTS (iCOTS) Chassis, Rugged COTS (RCOTS) / MIL-Spec Chassis, Powered Subracks, and Ruggedized / MIL-Spec Printers. These products can either be used for industrial applications, lab development use, or deployable military applications that require a highly reliable hardware platform and power solution, as they typically are subjected to extremely harsh environmental conditions. Additionally, NIS provides value-added services catering to COTS and RCOTS customers, such as environment testing, schematic capture, printed circuit board design/simulation/validation, program management, system integration, and subcontract builds.

ELECTRONICS PACKAGING METHODOLOGY



All chassis, enclosures, and mounting hardware are designed using SolidWorks 3D CAD software. Structural, thermal, airflow, and mass analysis, all subjected to EDA finite element analysis (FEA), are performed on all models in anticipation of environmental testing on the first production units. Our CAD tools, analysis software, and experience allow us to produce a 3D CAD model upon approval from the customer prior to or during the PDR event. Utilizing our in-house metal fabrication shop, NIS can quickly turn any design into a fully functional prototype in days.

BACKPLANE DESIGN

NIS has extensive experience in backplane design, validation, manufacture, and testing that combine multiple bussing and signaling technologies with high-speed signal fabric. Services including schematic capture, physical layout, component programming, quick turn prototype development, conformal coating, flying probe testing, and depot repair are offered. With leading-edge backplanes operating well above gigabit-per-second speeds, signal integrity has never been more important than it is now. NIS' design methodology includes signal integrity validation (speed, crosstalk, jitter), simulation, EMI/RFI mitigation and, finally, physical PCB layout with subsequent design rule checks performed on the validated CAD model.



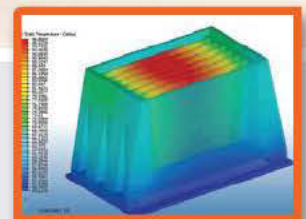
POWER SUPPLY DESIGN



As a vertically integrated manufacturer, Technology Dynamics Inc. (NIS' parent company) controls all aspects of many of the power supplies, inverters, and conditioning systems used in NIS' products. We provide custom engineering for the design and packaging of our products through the modification or custom design and internal manufacture of PC boards, transformers, and sheet metal. Each power supply, whether a plug-in board or completely customized, is specifically designed to accept the proper AC or DC input voltages, various output voltages based on components used, and accommodate the constraints of land, air, and sea vehicles.

DESIGN VALIDATION AND TESTING

All new products are subject to a thorough Design Validation and Test (DVT) plan which, for brevity purposes, tests all functional and environmental characteristics under both simulated and live operational conditions. An Acceptance Test Procedure (ATP) is then created which tests production units to ensure that all products shipped meet the written specification and are defect free.



MIL-SPEC MANUFACTURING / QUALITY



NIS' parent company, Electronic Integration Technologies, Inc. (EIT), specializes in manufacturing ruggedized COTS and MIL-Spec electronics assembly. EIT operates in consignment and full turn-key mode, giving customers the flexibility to select the model that best suits their particular operations needs.

At NIS and EIT, our commitment to quality is of the highest priority and EIT's ISO 9001:2000 certified quality system is applied to all programs, process control, procedures and documents, with quality inspections at each stage of the manufacturing process.

PRODUCTS OVERVIEW

ATR CHASSIS



NOVA Integration Solutions (NIS) specializes in the design, manufacture, test/validation, and system integration of highly specialized **ATR Chassis**. These highly reliable hardware platforms are typically subjected to extremely harsh environmental conditions, such as high shock/vibration, altitude, extreme temperature ranges, EMI/RFI, HEMP, nuclear/chemical survivability, salt, fog, humidity, water, sand/dust, and explosive atmospheres.

All new work leverages previous ARINC 404A or custom designs and are built to meet customers specifications utilizing various cooling methods (conduction, convection, liquid, etc.) based on the intended application. Each unique application may require the use of NIS' full engineering capabilities including enclosure design (including carbon fiber), FEA analysis, power supply design, backplane design and validation, system integration, etc.

RUGGED COTS (RCOTS) / MIL-SPEC CHASSIS

Rugged COTS (RCOTS) / MIL-SPEC Chassis are designed and tested to be a highly reliable hardware platform and power solution, as they are subjected to extremely harsh environmental conditions, such as high shock/vibration, extreme temperature and altitude ranges, EMI/RFI, power transients, etc.

Ruggedization is achieved through the use of stronger/thicker enclosures, shock mounting of internal components, power filtering, air filtering, heating and cooling solutions, use of higher quality components, etc. **Carbon Fiber Technology** for enclosure design may be implemented to greatly reduce weight, increase strength, increase thermal conductivity, and more!



COTS / INDUSTRIAL COTS (ICOTS) CHASSIS

NIS' standard **COTS Chassis** are a low cost and easy to maintain product. These chassis are available in various sizes with CompactPCI™ backplanes (VME64x optional), fixed fans or hot swap plug-in trays, and low cost ATX or N+1 redundant plug-in power supplies.

NIS' **ICOTS Chassis** build on the standard COTS Chassis platform and have many features that make them stand out against the competition. Customers of the ICOTS Chassis require the low cost of COTS Chassis but the feature-set of the more robust and customizable RCOTS Chassis line. Field replaceable fan trays, System Environmental Monitor, Peripherals, Custom Power Supplies and Custom Backplanes are just some of the options available.



RUGGED / MIL-SPEC PRINTERS

NIS' **Ruggedized Printers** utilize the latest generation inkjet, laser, and dot matrix commercial off-the-shelf print engines. This printer line-up boast features such as fast print speeds (over 30 ppm), photo quality printing, built-in duplex (two-sided) printing, wide format (tabloid 11" x 17") printing, multiple power supplies, and various mounting options.

The Rugged Printers utilize proven print engines while leveraging tested packaging methods to create units that survive harsh environments such as high shock/vibration, extreme temperature and altitude ranges, EMI/RFI, salt, humidity, sand/dust, and explosive atmosphere.



SYSTEM ENVIRONMENTAL MONITOR



An optional **System Environmental Monitor (SEM)** can be installed to locally or remotely monitor and control chassis parameters, such as fan speed, temperature, and system voltages to ensure optimal operating conditions. Customer may select from either a fully intelligent, microcontroller-based SEM or the SEM-Lite that monitors chassis and board temperature with automatic fan speed control.

NOVA

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ISO 9001

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Certification



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INDUSTRIAL COTS CHASSIS



BACKPLANES



RUGGED PRINTERS