

Milo Johnston

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SUMMARY

Senior mechanical engineer with **10 years** of experience developing ruggedized avionics packaging and high reliability electronic hardware for spacecraft and aerospace programs. Leads mechanical development from requirements, architecture, and interface definition through CAD, analysis, design reviews, qualification, production, integration, and **flight support**. Brings advanced capability with Creo, Windchill, Ansys Mechanical, **ASME Y14.5** GD&T, tolerance analysis, DFM, DFA, structural analysis, thermal design, vibration, shock, thermal cycling, and TVAC. Integrates PCBs and interconnects with electrical teams while protecting thermal paths, **connector access**, serviceability, mass targets, and producibility. Supports prototypes, fixtures, test planning, data review, failure analysis, root cause, corrective action, material disposition, and configuration control. Ready to contribute disciplined hardware leadership and practical design judgment across concurrent spacecraft programs.

EXPERIENCE

Senior Mechanical Engineer, Avionics Packaging

May 2022 - Present

Red Mesa Space Systems

Mesa, AZ

Owns spacecraft LRU packaging across requirements, architecture, Creo design, Ansys analysis, qualification, production, integration, and Windchill configuration. Leads concurrent hardware efforts, coordinates electrical and quality partners, and communicates design intent through controlled documentation.

- Architected spacecraft LRU enclosures in Creo, preserving connector access and **thermal paths** during integration.
- Applied **Ansys Mechanical** analysis before **qualification** reviews, clarifying structural and thermal design margins.
- Controlled Windchill revisions for drawings, BOMs, interfaces, and installation documents across flight hardware.
- Led prototype builds and fixture development, resolving assembly issues before production release.
- Reviewed vibration, shock, **thermal cycling**, and TVAC evidence, supporting clear **verification** decisions.
- Coordinated electrical partners on PCB **integration** and interconnect access, protecting serviceability during packaging reviews.

Mechanical Engineer II, Ruggedized Avionics

August 2019 - April 2022

Pinnacle Orbital Electronics

Phoenix, AZ

Developed ruggedized avionics enclosures and PCB packaging from concept through qualification and production support. Connected DFM, DFA, thermal design, test execution, and failure analysis with cross functional engineering decisions.

- Developed ruggedized avionics enclosures in Creo, balancing mass targets with durable **mounting interfaces**.
- Integrated PCBs and interconnects with electrical teams, resolving access issues before design release.
- Applied DFM and DFA reviews to enclosure assemblies, improving **producibility** during **prototype** builds.
- Supported TVAC and thermal cycling tests, reviewing data for design and material decisions.
- Investigated hardware failures through **root cause** analysis, then documented corrective actions for **production**.
- Prepared **drawings**, BOMs, and interface records that guided quality and manufacturing reviews.

Mechanical Engineer, Aerospace Electronics

July 2016 - July 2019

Canyon Aerospace Hardware

Tucson, AZ

Designed aerospace electronics housings and supported analysis, vibration testing, tolerance definition, and production readiness. Built practical design evidence through controlled drawings, test participation, and manufacturing collaboration.

- Designed aerospace electronics housings with **ASME Y14.5 GD&T**, improving interface clarity for manufacturing.
- Performed **tolerance analysis** on mounting interfaces, reducing fit risk during assembly reviews.
- Supported **vibration testing** with setup checks, instrumentation coordination, and documented **data review**.
- Created production drawings and BOM updates, maintaining alignment between design and released hardware.
- Resolved material and assembly concerns through quality reviews and documented **corrective action**.
- Partnered with manufacturing on fixtures and assembly aids, supporting repeatable hardware production.

Associate Mechanical Engineer, Electronic Packaging

July 2013 - June 2016

Desert Flight Instruments

Tempe, AZ

Supported high reliability electronic packaging through CAD documentation, fixture development, thermal path definition, and configuration records. Contributed to early career hardware programs while building strong design and production fundamentals.

- Created CAD drawings for electronic packaging, translating design intent into controlled manufacturing documents.
- Developed assembly fixtures that supported repeatable builds and smoother technician workflows.
- Defined **thermal paths** for packaged electronics, supporting reliable operation during engineering reviews.
- Maintained configuration records for drawings, **BOMs**, and hardware revisions across active programs.
- Supported **prototype** assembly and test preparation, documenting issues for senior engineering **review**.
- Participated in **production** support activities, helping close design questions before hardware delivery.

PROJECTS

Spacecraft LRU Qualification Support 2026

Supported a distinct spacecraft packaging effort through prototype assembly, Ansys review, qualification evidence, and controlled Windchill documentation. Focus remained on reliable integration, clear interfaces, and production ready hardware.

Ruggedized Avionics Enclosure Development 2022

Developed a ruggedized enclosure concept with PCB access, thermal paths, DFM, DFA, TVAC support, and failure analysis. Work connected practical packaging choices with dependable aerospace production.

LEADERSHIP & AWARDS

- Recognized for disciplined spacecraft packaging ownership across design, analysis, qualification, and production support.
- Selected to support cross functional avionics reviews involving electrical integration, quality evidence, and configuration control.
- Praised for clear technical documentation that helped teams resolve hardware questions during development and test.

EDUCATION

Bachelor's Degree in Mechanical Engineering

2013

Arizona State University GPA: 0

Tempe, AZ

Coursework: Mechanical design, thermodynamics, materials science, engineering analysis

CERTIFICATIONS

- ASME Y14.5 Geometric Dimensioning and Tolerancing 2020
- Ansys Mechanical Structural Analysis 2021

TECHNICAL SKILLS

- Mechanical CAD: Creo, NX, SolidWorks
- Product Lifecycle: Windchill, configuration control, revision management
- Finite Element Analysis: Ansys Mechanical, FEA, structural analysis
- Geometric Dimensioning: ASME Y14.5, GD&T, tolerance analysis
- Avionics Packaging: LRUs, spacecraft hardware, electronic enclosures
- Structural Testing: Static structural, modal, random vibration
- Thermal Engineering: Thermal analysis, thermal paths, thermal cycling
- Environmental Testing: Vibration, shock, TVAC
- Manufacturing Design: DFM, DFA, producibility
- Hardware Documentation: Drawings, BOMs, interface definitions
- Reliability Engineering: Failure analysis, root cause, corrective action
- Integration Engineering: PCBs, interconnects, connector access

SKILLS

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|-----------------------|--------------------|----------------------|---------------------|
| • Avionics Packaging | • NX | • FEA | • DFM and DFA |
| • Spacecraft Hardware | • SolidWorks | • ASME Y14.5 | • Static Structural |
| • LRUs | • Windchill | • GD&T | • Modal |
| • Creo | • Ansys Mechanical | • Tolerance Analysis | |

PROFESSIONAL AFFILIATIONS

- American Society of Mechanical Engineers, participant in mechanical design and GD&T knowledge sharing.
- Aerospace Industries Association, connected with peers across spacecraft hardware and production engineering.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST