

Anderson Williams

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SUMMARY

Thermal engineering leader with 14 years developing and productizing cooling solutions for high performance electronics. Leads liquid cooled and air cooled architecture, CFD, **thermal testing**, validation, production readiness, and **simulation to test correlation** across compute and networking platforms. Hands on work includes cold plates, manifolds, pumps, CDUs, heat sinks, heat pipes, vapor chambers, TIMs, and **thermal data acquisition**. Applies physical measurements to define design parameters, improve models, and resolve reliability risks. Experience covers ASIC, optical, and power systems with BGA, Flip Chip, and **2.5D/3D IC packaging**. Partners with suppliers, ODMs, manufacturing, hardware design, and executive teams to move advanced cooling concepts from modeling through qualification and scalable production.

EXPERIENCE

Principal Thermal Engineering Leader

July 2021 - Present

Apex Compute Systems

Austin, TX

Leads thermal architecture, modeling, validation, supplier integration, and production readiness for high performance compute platforms. Guides technical decisions across **liquid cooling**, air cooling, advanced packaging, reliability, and executive communication.

- Directed liquid cooled and air cooled architecture from concept modeling through production qualification.
- Productized **cold plates, manifolds**, pumps, and CDUs with suppliers and ODM partners for scaled manufacturing.
- Built CFD and thermal testing workflows that correlated predictions with instrumented hardware measurements.
- Integrated heat pipes, **vapor chambers**, TIMs, and **heat sinks** around advanced IC packages.
- Led failure investigations using **thermal data acquisition**, physical inspection, and model updates.
- Presented qualification findings, design tradeoffs, and cooling roadmaps to executive stakeholders.

Senior Thermal Engineer

March 2017 - June 2021

Summit Network Hardware

Denver, CO

Owned thermal design and validation for networking platforms with high power ASIC, optical, and power system assemblies. Mentored engineers while shaping test methods, reliability decisions, and liquid loop development.

- Owned thermal design and validation for networking platforms with high power ASIC assemblies.
- Developed **liquid loop** concepts using cold plates, pumps, and manifolds against prototype test data.
- Established **air cooling** designs with vapor chambers, **heat pipes**, heat sinks, and TIMs.
- Defined thermal test plans, instrumentation layouts, **acceptance criteria**, and qualification documentation.
- Evaluated reliability risks from temperature gradients, interface performance, and flow distribution.
- Mentored engineers on **CFD** discipline, correlation methods, and structured **thermal troubleshooting**.

Thermal Mechanical Engineer

August 2014 - February 2017

BlueMesa Electronics

Phoenix, AZ

Supported thermal mechanical design, documentation, prototype evaluation, and build readiness for compact electronics. Connected engineering requirements with controlled procedures, drawings, measurements, and cross functional reviews.

- Designed thermal solutions within mechanical packaging constraints using **heat transfer** analysis and testing.
- Created work instructions translating engineering requirements into repeatable **manufacturing** execution steps.
- Used **CAD**, drawings, and dimensional data to improve hardware build readiness.
- Investigated technical issues with **root cause** methods and controlled corrective documentation.
- Coordinated engineering, quality, fabrication, and laboratory stakeholders through technical reviews.
- Presented findings, risks, and recommendations supporting informed engineering decisions.

Mechanical Engineer, Electronics Cooling

June 2012 - July 2014

Canyon Ridge Instruments

Tempe, AZ

Supported enclosure cooling, airflow development, heat sink interfaces, and component temperature limits for electronics programs. Prepared measurements, procedures, technical reports, and review material for controlled engineering execution.

- Supported enclosure cooling and airflow design for electronics with component temperature limits.
- Created work instructions that translated engineering requirements into repeatable execution steps.
- Used CAD, engineering drawings, and dimensional data to evaluate hardware readiness.
- Investigated technical issues with root cause methods and recorded corrective findings.
- Coordinated engineering, quality, fabrication, and laboratory stakeholders through controlled reviews.
- Presented results, risks, and recommendations through clear technical reports.

PROJECTS

Compute Platform Liquid Cooling Productization 📅 2024

Moved cold plate, manifold, pump, and CDU concepts from analysis through supplier alignment and production qualification. Physical measurements strengthened model correlation and supported repeatable hardware decisions.

Advanced Package Thermal Validation 📅 2020

Validated cooling performance around ASIC, optical, and power assemblies using CFD, instrumentation, and structured test plans. Findings informed reliability reviews and packaging choices.

LEADERSHIP & AWARDS

- Recognized as a technical leader for productizing liquid cooling across compute hardware programs.
- Selected to present thermal qualification findings and roadmap decisions to executive engineering audiences.
- Trusted mentor for CFD modeling, simulation to test correlation, and thermal troubleshooting practices.

EDUCATION

Master of Science in Mechanical Engineering

2012

Arizona State University GPA: 3.8

Tempe, AZ

Coursework: Thermal Sciences, Fluid Mechanics, Computational Fluid Dynamics, Heat Transfer

Bachelor of Science in Mechanical Engineering

2010

University of Arizona GPA: 3.8

Tucson, AZ

Coursework: Thermodynamics, Heat Transfer, Fluid Mechanics, Mechanical Design

CERTIFICATIONS

- ASME Professional Development, Electronics Cooling and Thermal Management 📅 2024
- Thermal Management and Electronics Cooling Professional Training 📅 2024

TECHNICAL SKILLS

- **Liquid Cooling Hardware:** Cold plates, Manifolds, Pumps, CDUs
- **Air Cooling Hardware:** Heat sinks, Heat pipes, Vapor chambers
- **Thermal Interface Materials:** TIM selection, Interface analysis, Contact resistance
- **CFD and Modeling:** Computational Fluid Dynamics, Thermal models, Flow modeling
- **Thermal Testing:** Thermal test plans, Instrumentation, Acceptance criteria
- **Data Acquisition:** Temperature sensors, Thermal data acquisition, Physical measurements
- **Advanced Packaging:** BGA, Flip Chip, 2.5D and 3D IC packaging
- **Thermal Validation:** Simulation to test correlation, Performance validation, Qualification
- **Reliability Engineering:** Component reliability, System reliability, Failure investigation
- **Product Development:** Production readiness, Supplier engineering, ODM collaboration
- **Mechanical Design:** CAD, Engineering drawings, Dimensional data
- **Technical Communication:** Technical reports, Executive presentations, Design reviews

SKILLS

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|------------------|------------------|----------------------------------|-----------------------|
| • Liquid Cooling | • CDUs | • CFD | • BGA Packaging |
| • Cold Plates | • Heat Pipes | • Thermal Testing | • Flip Chip Packaging |
| • Manifolds | • Vapor Chambers | • Thermal Data Acquisition | • System Reliability |
| • Pumps | • TIMs | • Simulation to Test Correlation | |

PROFESSIONAL AFFILIATIONS

- ASME professional development participant focused on electronics cooling and thermal management.
- Technical contributor across supplier, ODM, manufacturing, hardware design, and reliability reviews.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

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

REFERENCES

AVAILABLE ON REQUEST