

# JAIME SANCHEZ DE LA VEGA

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## SUMMARY

4+ years shipping high-volume mobile devices (Surface Pro, Duo, Type Cover; 1M+ units). End-to-end ownership of electromechanical subsystems—architecture, CAD, DFM/DFA, prototyping, tolerance analysis/finite element analysis (FEA), and failure analysis—with Asia contract manufacturers (CMs) and joint design manufacturers (JDMs).

## CORE STRENGTHS

- **Subsystem Integration:** batteries; antennas (cell/GPS/Wi-Fi/BT/UWB); haptics; OLED/LCD; speakers; FPC/PCB; soft goods
- **Manufacturing & Quality:** DFM/DFA; GR&R/CPK; GD&T/stack-ups; DOE/FMEA; failure analysis; plastic/metal part design
- **Analysis & Test:** FEA (structural/modal); Instron/high-speed video rigs; drop/bend correlation; vibe/TVAC
- **Tools:** Creo Parametric 3D CAD, SolidWorks, ANSYS, MATLAB, Excel, STK, Python (basic), Jira—quick to ramp on Siemens NX

## EXPERIENCE

### Microsoft Surface — Mechanical Design Engineer II | Oct 2020 – Present | Redmond, WA

- Owned batteries, antennas, haptics, FPC/PCB, soft goods and enclosure modules from concept to PVT; shipped >1M units (Surface Pro & Duo, Type Cover).
- Led EVT/DVT/PVT builds with Asia CMs/JDMs; closed tooling, process and assembly issues in real time (injection molding, CNC, sheet metal, die-cutting, laser, lamination).
- Built tolerance stack-ups and executed GR&R/CPK to lock cosmetic gaps/flushness, hitting EVT to PVT targets.
- Designed validation prototypes and custom test rigs (Instron fixtures, high-speed video, drop test); drove root-cause on hinge/battery connector issues to verified fixes.
- Ran structural FEA on frames/hinges; correlated to drop/bend tests to freeze part pattern and thickness.
- Conducted DOE on fabric lamination (temperature/pressure/dwell) to boost Type Cover cosmetic yield.
- Balanced battery Wh vs. z-height, thermal budget, antenna keep-outs, and camera stacks to meet ID & RF performance.
- Created visual briefs/exploded views to align Industrial Design (ID), Human Factors (HF), Design for X (DFx), Electrical Engineering (EE), Firmware (FW) and Reliability on spec, schedule and risk burndown.
- Designed high-cosmetic enclosures (fabric laminate, CNC) and sealed interfaces for audio porting and dust/liquid ingress.

### Arizona State University — Engineer Associate | Feb 2020 – Oct 2020 | Tempe, AZ

- Led a NASA microsatellite proposal team; secured \$500k+ in external awards.
- Built a spacecraft development lab (vacuum chamber, vibration table, ESD benches), authored operations procedures.

### NASA Jet Propulsion Laboratory — Advanced RF & Optics Intern | May 2019 – Aug 2019 | Pasadena, CA

- Supported a 6U CubeSat laser-communications demo: thermal/power/orbital analyses in MATLAB and STK.

## SELECTED PROJECTS

### Principal Investigator — LightCube CubeSat (ASU + NASA) | Jan 2019 – Mar 2023

- Led a 30-person team from concept to flight hardware delivery; spacecraft launched on SpaceX CRS-27 (Mar 2023).
- Modeled spacecraft in SolidWorks; designed multilayer PCBs (Deployable UHF antenna, OBC, solar arrays, HV flash payload); passed NASA/Nanoracks safety and environmental testing.

### Lead Mechanical Engineer — Phoenix CubeSat (ASU + NASA) | May 2016 – Nov 2019

- Architected and built launch vehicle compliant primary structure; ran structural/modal FEA (ANSYS).
- Executed vibration & TVAC campaigns; closed findings with design updates; spacecraft launched on NG-12 (Nov 2019).

## EDUCATION

B.S.E. Aerospace Engineering & B.S.E. Electrical Engineering — Arizona State University, Dec 2019