



CASE STUDY

ADS Develops a RF Test Automation Spanning the Engineering Life Cycle

OVERVIEW

ADS was hired by a Satellite-based communication technology company to design and develop an automated test to span the entire engineering life cycle for their multi-spot beam Ka-Band satellite system. The satellite system will provide flexibility and support for a broad range of applications and technology advances.

THE CHALLENGE

The client needed a system with test & measurement and control solutions to support the mission from engineering design verification to manufacturing quality control.

- Test technologies during design and development stage to measure data to modify the design.
- Use the same test system to support production testing to make sure the components are meeting specifications set during the design and development stage.

THE SOLUTION

With ADS' expertise in automated test, ADS System Engineers developed a test automation interfacing test rack components and the propriety RF transmit boards and assembled modem chassis for data acquisition, instrumentation control, alarm generation and quality management.

- ✓ The software incorporated NI LabVIEW 2016SP1 & LabWex LabSSH Application for communication with the unit under test (UUT).
- ✓ Test Measurements Included: Waveform Data, Phase Noise, Spurious, Output Power, Error Vector Magnitude, Modulation Error Ratio, 3rd Order Intercept Point, and Return Loss.
- ✓ Testing included output power calibration and equalizer filter calibration.
- ✓ The integrated test software ensured data storage both locally and remotely seamlessly within the client's quality management system.



CONCLUSION

ADS's automated test hardware and software collectively became a interdepartmental tool within the client's engineering life cycle. The transition from automated test fixture in the design verification stage to manufacturing quality management was smooth and successful.

- ✓ The **RF design engineers** use the test system to verify the board design.
- ✓ The **manufacturing operators** use the test system to validate the production.
- ✓ The **warranty technicians** use the test system to troubleshoot production failures.
- ✓ The **quality control engineers** use the data from the test fixtures to measure production statistics.

