

Antenna Company, Eindhoven, Netherlands

Accurate measurement for next generation, high performance antennas

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StarLab was the first choice for us and has been a game-changer for our business. Starlab delivers accurate and rapid measurements on a schedule entirely within our control, enabling rapid design turns and validation without the lengthy schedule and high cost of using external labs. The Starlab has enabled us to accelerate our pace of development giving us a definite edge over our competitors.

Dr. Diego Caratelli
Chief Technology Officer at Antenna
Company



Meeting requirements
of increasingly fast paced
developments in wireless
technology

The challenge

The Antenna Company is leading the industry with its innovative development of next-generation, high-performance, SuperShape® antennas.

The challenge for The Antenna Company was to improve order turnaround time by bringing testing capabilities in-house, without compromising accuracy standards, and within a limited area of space. With developments of technology in the wireless industry moving at such a fast pace, the requirements for those serving the industry to be faster, efficient, and more accurate are increasing.

“Throughout our design and optimization process we regularly need to make measurements, adjust settings, then measure again during every step of the design process. Then, on project completion we also need to provide data reports to the customer to verify our solutions.” said Chief Technology Officer Dr. Diego Caratelli.

"Our challenge was to find a solution which would bring a testing facility in house and one which would significantly impact on our productivity in a positive way to help us achieve return on investment in a short period of time." says Dr Caratelli.

// Our solution

The StarLab by MVG performs antenna pattern measurements of small to medium sized antennas and is most suitable for laboratories and production environments where space is limited, cost is critical and the flexibility of a portable system is required.

Having the StarLab in-house allows companies to test to levels which meet industry standards without using external providers. This means that antenna development can be achieved in a much quicker timescale.

The new StarLab, version 2, which was released to market in 2014, is around 3-4 times faster than the version 1 and offers an improved dynamic range (650 - 800 MHz band coverage) which now includes the LTE band. StarLab offers repeatable measurements which assist with the test, measure and re-test process during development and an end result is our much improved delivery times.

// Saving time

Bringing testing capability in house with StarLab significantly reduces the amount of time needed to obtain accurate measurements. How does it compare to using an external facility? Dr Caratelli explains:

"With StarLab our tests and verification are all completed in house which provides many benefits for us. Firstly, we can turn projects around in a much quicker timescale as the testing system is immediately available to us; no more waiting in a queue for a third party testing house. The measurements themselves are taken in a much shorter time scale as the StarLab is more advanced system than the external facility we were using. Previously, one 3D scan pattern for an average antenna would take around three or four hours, now we can characterise a 3D pattern in a matter of minutes."

// Increasing productivity

"The time saving is impressive." says Dr Caratelli, "Using StarLab, with its user-friendly software interface, means that we can prepare duplicate measurements, which saves many hours. The reality for us is that we can gain an average of two weeks per project on the end delivery date, sometimes more. This has enabled us to keep pace with much larger competitors having much greater resources at their disposal.

"Since we have had StarLab we have accelerated our project completion rate and output by a factor of 3 or 4. The costs we have saved on sending antennas out to external testing means that we expect to achieve return on investment of the Starlab within 9 months from installation."

// Maintaining confidentiality

"Antenna Company is reopening the field of embedded antennas using a different approach in terms of materials and shape." Says Dr Caratelli, "Maintaining the integrity of our unique IPR has been a significant challenge as we grow the company, hence we have taken every precaution and close supervision with prototypes and samples." Furthermore, our customers are some of the leading end product vendors developing the wireless products of tomorrow, that impose tight confidentiality requirements on Antenna Company. Maintaining testing in house enables us to guarantee confidentiality for our designs as well as our customers."

// Improved accuracy

In an industry where the testing process is key to reaching compliance, how do you ensure that accuracy of the antenna the customers receive is verified?

"In the past we faced issues with accuracy where we were using third party labs. The accuracy of the measurements was not always 100%. When you have a situation like this it is very difficult to have confidence in the data for us and for our customers. With StarLab, the accuracy is what we expect, in fact, much better. We know that our measurements are accurate to within 0.6 dB, which means that we have full confidence that we are both using and submitting accurate measurements to our customers."



Conclusion

Dr Caratelli concludes: "For Antenna Company StarLab is a pivotal piece of equipment in the development of our products. Previously, out-sourcing our SuperShape® antenna designs for testing was time consuming and expensive. Since the installation of the StarLab in our laboratory in early January, we are already experiencing a positive change in our business. With StarLab we can achieve rapid and more accurate measurements in a quicker time scale, meaning that our customers receive a superior quality product in a shorter time frame."

Next steps

The Antenna Company's innovative approach means that they are already looking at their next steps; says Dr Caratelli, "As we work on new and exciting projects the importance of having the StarLab in-house becomes more visible. One current project is an antenna with multi-functionality for mobile, Wi-Fi and Bluetooth. It's a project which has really come to life through our ability to continually test and verify in-house at each stage of the complex design process."

Product information

The StarLab was the first of its kind as an all-in-one, compact and portable antenna measurement tool for where space is limited, cost is critical and the flexibility of a portable system is required. The StarLab has provided years of service to the Telecom, Aerospace & Defense, and Automobile industries, as well as to research institutions.



THE BENEFITS:

The benefits of having an on-site test facility at Antenna Company are:

- 1 It maintains confidentiality during development.
- 2 With prototype testing we can test, check, modify and re-test to full compliance on-site and within minutes.
- 3 Quick validation as we can check and verify compliance when needed.
- 4 Improved accuracy to 0.6 dB
- 5 Time saving of around two weeks per project, as we have no delays from using an outside test center.
- 6 Cost saving, achieving return on StarLab investment within 9 months from installation.



To find out more about how MVG products could help your business please visit
www.mvg-world.com or email salesteam@mvg-world.com