

Project Note

Test system for a partially implanted hearing aid

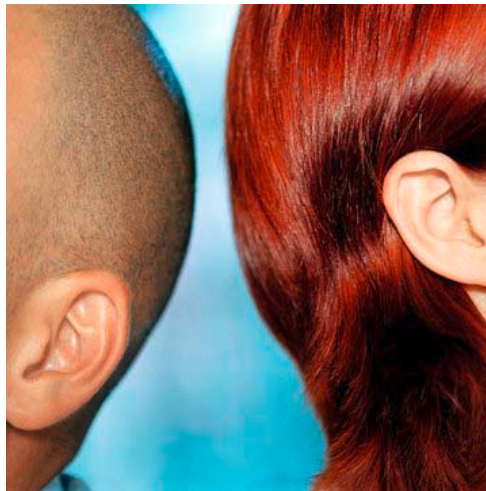
Zühlke developed and implemented a device for testing the electronics in a semi-implanted hearing aid. The customer profited from the multidisciplinary development environment and from receiving the system from a single supplier.

Task

Cochlear Acoustics Ltd. is a manufacturer of semi-implanted hearing aids (Class 3 device). Before being integrated in a titanium housing, the electronic system in each hearing aid of the new product generation is tested. The engineers faced two challenges: to contact the measuring points in the tight space available and to achieve reproducible reading of the serial numbers on the test specimen (reflection problem). Zühlke created the entire test device as a system supplier conforming to GMP guidelines. The system consisted of the mechanics and electronics, the user interface, data recording and integration in the customer database.

Implementation

The project team sat down with the customer and defined the user requirements und drew up the specification for the test device. The design specs were available following the design phase. They feature an ingenious positioning approach that compensates for the manufacturing tolerances of the test specimen. LabVIEW was used for controlling and data recording for the measuring process; an electronic module specially developed by Zühlke served as the interface between the commercially available measuring devices and the test specimen. The user operated the test device from a touch screen. During the realization phase, the virtual prototype underwent a system FMEA that helped the developers to detect and remedy risks and shortcomings. Once the design specification was approved, Zühlke built the testing device in its own workshop and put it into operation. The project ended with the qualification of the system (IQ, OQ, PQ) and its transfer to the customer's production environment. The entire development was subject to GMP guidelines.



Tools

- LabVIEW
- ProE
- Orcad

Customer benefits

- As a system supplier, Zühlke implemented the entire testing device with an optimum degree of automation and the maximum possible number of standard modules. The customer had only one contact partner.
- Zühlke drew on its extensive LabVIEW knowledge and a rich library to develop the process control software for the test system at a reasonable cost.
- The customer benefited from Zühlke's vast experience in implementing development projects in conformity with GMP.

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