

## “Specialist baby monitoring company Owletcare trusts J-Testr+ and J-RF to test their high-tech miniature products”

Owlet Baby Care Inc, of Utah USA, was founded in 2013 by a team of passionate parents who wanted to bring themselves, and other parents around the globe, peace of mind and assurance by developing a monitor that tracks a baby's breathing and heart rate.

The Owlet Baby Monitor is a unique device that leverages pulse oximetry, the same technology used in hospitals, expertly miniaturized into a baby sock, to alert parents if their baby's oxygen levels or heart rate are out of range and they are having difficulty breathing.

The miniaturization of the electronics required to make such small electronic monitors and transmitters brings several challenges to the product's manufacturing test. In this application the tester was required to be able to support and hold multiple UUTs, give adequate support, and pin ultra-fine pitch connectors, reliably, whilst situated inside a RF screened environment.

The mechanical aspects were only part of the challenge. The UUT has many electrical stimulation and measurement requirements, which include accurate RF power/frequency measurement abilities, accurate frequency monitoring, digital IO, high speed ISP programming, current measurement and, of course, power.

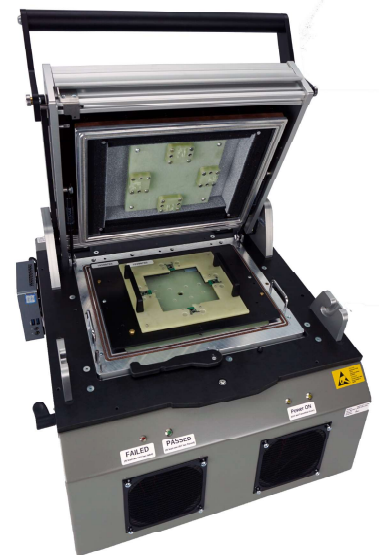
Traditionally such a test would consume lots of space, not only for the RF screened chamber, but also for the multiple electronic measurement and stimulation devices required. However, by using the highly compact and modern J-Testr and J-RF test systems, from Eiger Design GmbH, all the test electronics are able to be fitted inside the RF test fixture itself, achieving a complete solution in a highly portable dimension of just 50x50x50cm. Such space saving allowed the contract electronics manufacturer to minimise bench and storage space requirements, as well as enabling a quick and easy setup of a fully 'inline' production line hence reducing UUT movement within the factory, and reducing production costs.

Equally important to test equipment size is the cost of the complete solution. A significant cost involved in constructing functional test systems is in the labor required to both construct and then program the required test cases. With the J-Testr's PCB Interposer concept, multiple cables were avoided

allowing a simpler, faster to implement, and more reliable connection solution whilst reducing the overall design time. The J-Testr's feature rich, exchangeable, peripheral stimulation/measurement cards give advanced easy to use functions, such as general purpose IO, PWM, UARTS and SPI, available on all card types 'over and above' the standard card function. This tester architecture allows maximum flexibility during the development, avoiding the requirement for extra peripheral cards just to give standard features that are required by most, if not all, test systems.

The final, and one of the most important, elements in creating the completed functional test solution is the test development/executive software used. This software has the responsibility not only to bring all the system elements together, but also to provide a fast and efficient environment to allow rapid development. With the J-Testr's universal interfaces the customer is able to select the most appropriate SW environment, Ethernet or JTAG based, for the given application. For the Owletcare project ATEASY Lite was selected for its rapid development, high performance features (including touch screen compatible interface and flexible logging options), all at an extremely competitive price.

In conclusion the combination of the J-Testr, J-RF and the ATEASY software platform produced a RF mixed signal test solution in a footprint not achievable with any other 'off the shelf' test system available on the market. ATEASY's powerful software RAD environment and easily configured test executive help to reduce the overall test development times and help on-going maintainability in the field.



### Quotes

*“The test solution provided by Eiger Design, utilizing the J-Testr, J-RF and ATEASY software platform, has surpassed our expectations in performance and test coverage for such a small physical footprint. The whole development cycle, from concept to completion, proved to be flexible and professional allowing us to meet our demand and quality requirements.”*

**Ryan Workman - Supply Chain Manager - Owlet Care**

*“The Owletcare functional test solution has given us flexibility of usage within our production facility. In particular, the end solution's size is very impressive compared to other similar solutions currently commissioned within our site. The simple and configurable touchscreen interface, provided by the ATEASY test executive, helps us further reduce valuable production space by eliminating a space in-efficient keyboard and mouse.”*

**Director of Operations - Owlet CEM - China**