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Pioneering hydraulic transient monitoring “start-up” Inflowmatix™ employs J-Testr+ Midi, using the free Python software, for functional test of their multi faceted modular product.

Inflowmatix™, a U.K. technology start-up, creates innovative and customer tailored solutions for the steady-state, resilient and energy efficient operation of water supply networks by continuously monitoring and analyzing the fluid dynamics in networks.

Inflowmatix™ has developed “InflowSense™”, a compact and robust product providing the functionality required to rapidly sense and accurately measure small changes in pressure. The collected data is stored and transmitted wirelessly to assist the water utility companies maintain a more reliable water network.

This multi-featured design uses several electronic sub-circuits and requires sophisticated power management techniques to enable long term and unmaintained operation.

With high installation costs and extended service life expectations it was critical that all units were fully functionally tested prior to deployment in the field. Inflowmatix™ liaised closely with Eiger Design’s team to define an optimal set of requirements to provide comprehensive test coverage, whilst keeping capital costs and production test time to a minimum.

To meet their requirements with minimal test bench footprint, Inflowmatix™ selected the unique J-Testr+ Midi solution which incorporates a standard J-Testr system within a medium sized fixture and enclosure. This approach significantly reduced the amount of space and cabling that is normally required for such test system.

Inflowmatix™ also chose to use Eiger Design’s ‘EZ-Wired’ concept. This uses low cost ribbon cables which are faster to implement and provide more reliable interconnection between the J-Testr and the fixture pins.



Picture: EZ-Wired Connections

The highly configurable nature of the J-Testr system, and its cable-less customisable interposer concept, allowed for easy integration with 3rd party test equipment such as a FEASA LED analyser and a low cost Segger production grade SWD programmer.

These integrations allowed Eiger Design to provide a solution that consolidated all the requirements in one highly compact integrated universal test solution and meet the strict commercial targets typically imposed by ‘start up’ companies such as Inflowmatix™.



Picture: J-Testr Midi

To further reduce the solution cost, but without affecting test performance, Inflowmatix™ decided to program the test cases using the ‘free’ open source Python platform . Python is just one of many test development environments with which the J-Testr is compatible, and is supported by free downloadable example drivers from the Eiger design website.



Conclusion

Inflowmatix™ was able to easily and effectively combine the flexibility of Eiger Design’s lightweight, portable and highly configurable functional tester with the already familiar Python software platform. In taking this approach, Inflowmatix™ has achieved a full functional circuit test solution targeted to their specific requirements and accomplished this all within a strict financial budget.

Tester Facts

- Full ‘Bed of Nails’ solution
- Ultra-compact 46 x 49x 34cm size
- Fully integrated precision power
- 28+ precision high speed ADC channels
- 8 precision high resolution DAC channels
- 32 flexible high speed Timer IO lines
- 16 GPIO lines with below features:
 - UART
 - SPI
 - PWM
 - J-Safe protection
 - External mux control
- Reliable & high speed EZ Wired cabling
- Fully integrated FEASA LED analyser
- Segger high speed SWD programmer
- Automated mechanical switch activation
- UUT RF connection for external antenna
- Controllable from remote site

Quote

We were delighted to find that all our test requirements could be met in such a compact solution using the cost effective J-Testr+ Midi. With the partnership of Eiger Design’s development team from test definition through to test bench installation we have moved quickly to full production test capability and have total confidence that the units we deploy to the field will be absolutely fit for purpose.
Steve Durrant, Principal Test Development, Inflowmatix™