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Quartzdyne Newsletter

May 2010

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Obsolescence of the Fischer Connector

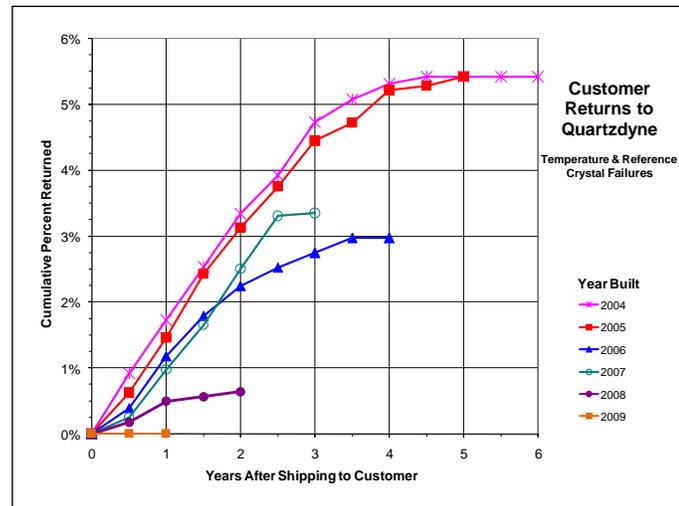
In our last newsletter we announced that we are moving to a new connector design on our 0.88-inch and 0.75-inch transducers. We have been taking input and providing samples of both cables and connectors. We will begin phasing this change in on June 1st and anticipate obsoleting the Fischer connector by the end of 2010. If the Fischer connector is still used in your process and you have not had communication from us please contact us immediately. A drawing of the new 7-pin connector is available at:

http://www.quartzdyne.com/spec/dmb002_connector.pdf

Reduction in DLS failures

In 2007, we developed a new ASIC circuit that “kick-starts” marginally DLS crystals. This feature is termed automatic gain control (AGC). Our customized AGC works in this manner: if the crystal impedance is normal, the AGC remains off. If the crystal impedance becomes unstable (DLS), the AGC turns on and overdrives the crystal to maintain oscillation. After a DLS episode is over, the AGC shuts off. We believed that the AGC feature would cut the number of DLS crystal returns in half.

In the course of analyzing our world wide failures we note that we have seen a 76% reduction of failures due to DLS QT/QR crystals on units shipped with ASIC hybrids. Our [field reliability report](#) showing this data will be published in the next few weeks. Internally we've noted that ASIC hybrids have a 33% higher MTBF based on our in-house 225°C Powered-Life and 250°C Life-Cycle qualification tests.



OTC 2010 – Free Day Passes Available

Once again Quartzdyne, along with Quartzdyne Electronics, will be attending the Offshore Technology Conference (OTC) in Houston. If you would like to attend the conference, we have free day passes that are available upon request from Quartzdyne. Please contact the Quartzdyne sales department to receive your complimentary day pass. While at OTC, make sure you visit the Quartzdyne booth 4044.

Presentations at HITEC 2010

Quartzdyne engineers will be presenting two papers at this years High Temperature Electronics Conference. The first is titled “High Temperature CMOS Reliability and Drift”. Summary - Custom ASIC subcomponents reliability and drift testing at 225°C, 250°C, and 275°C, results are better than expected. Reliable 250°C operational bulk silicon ASICs are possible with good design techniques.

The second paper looks at resistor drift on values typical of those used in our circuits. Resistor drift is becoming our prime wear-out mechanism. The study was taken on to see if certain technologies performed better than others at these extreme temperatures (250°C and 285°C). The findings were surprising, showing no clear winners, but hinting at things that can be done by the vendors to improve performance.

HITEC Technical Program: <http://www.imaps.org/programs/hitec2010.htm>

Qlink and Series I update – New USB based interface

If you don't know what a Qlink or Series I is you can probably move on to the next point. If you do, you will want to take note. Connecting a Quartzdyne transducer to a computer requires some sort of interface unit. Historically for frequency transducers that interface unit was called a Series-I. For digital transducers it was a device called a Q-Link.

These interface units have worked well and served their purpose for many years. However, parts obsolescence and computers moving away from serial ports have forced a re-design of the interface devices. We are designing a new interface unit that will combine the ability to communicate with either a frequency transducer or a digital transducer in a single box. Each box will be single channel (read one transducer) and will interface to a computer via a USB connection. Power for both the transducer and interface box will come from the USB port (no separate power connection or international adapters will be required).

Quartzdyne is still in the process of finalizing design requirements for this new interface device and welcomes your input. Contact the Quartzdyne sales department to provide suggestions or get more information.

Turn-key Solution: QE Hybrids + Tool Integration

We're pleased that the QE hybrid business grew briskly in 2009. When we build a customer's hybrid, we apply the same techniques that have made our transducer electronics rugged and reliable at high temperature. For several customers we're also doing some turn-key work. Since we have the capability to fabricate hybrids, assemble tools, and perform electron-beam welding, Quartzdyne can provide a complete turnkey solution to reduce your leadtime, cost, and risk. Please contact us to discuss hybridizing your design or integrating your tool.



Quartzdyne Seminars

When we meet with a new customer or visit an oil and gas company, we teach a 90-minute seminar that explains our technology and how we measure/improve reliability. Since Quartzdyne is the industry-standard transducer in most tools today, the seminar helps customers and end-users understand quartz capabilities, and how quartz compares with piezoresistive sensors. We also clarify metrology terms like accuracy, repeatability, linearity, hysteresis, stability, and resolution.

If you have a field location, a group of staff, need a refresher course, or a customer that could benefit from this seminar, we would be pleased to visit them and present this seminar. Please contact us if we can be of service in this area.