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Quartzdyne Newsletter

October 2007

- **Quartzdyne Electronics Presents at HITEN**
- **New ASIC Improves Crystal Startup and Hybrid Reliability**
 - Last buy of high-voltage QH (1") and QM (0.88") transducers
- **Increased Capacity Reduces Deliveries to 6 Weeks**
- **3½" Coefficient Disks -- Going, Going, Gone!**
- **Annual Technical Conference and Exhibition (ATCE), November 12-14**

Quartzdyne Electronics Presents at HITEN

In September, Quartzdyne Electronics (QE) presented two papers at the International Conference of High Temperature Electronics (**HITEN**) in Oxford, England. Milton Watts presented a paper entitled Circuit Design for High Temperature Hybrid Manufacturability, outlining the key steps to transition reliably from surface-mount/through-hole electronics to a hybrid multi-chip modules. Shane Rose presented A 225°C Rated ASIC for Quartz-Based Downhole Transducers which shared the design criteria and test results on the oscillator ASIC. We invite you to follow these links and read more about the accomplishments of our QE team.

Quartzdyne launched QE last year in response to customers' needs to upgrade from surface-mount and through-hole circuits to hybrid technology. By leveraging our hard-earned experience and know-how on hybrid circuits, QE will manufacture your hybrid to the high standard you've come to expect from Quartzdyne transducer hybrids. Our techniques and specialized materials ensure resilient component attachment and exceptional wirebonds. QE will screen and qualify your custom hybrid circuit prior to shipment, just as we do for hybrids used in our transducers.

QE will build your hybrid circuit, allowing you achieve longer life, higher temperature operation, reduced circuit size, and rugged packaging for severe downhole environments. To demonstrate the long life at high temperature provided by our hybrid electronics, we've deliberately destroyed thousands of circuits in our lifecycle tests since 1998. Although the up-front costs of die acquisition and layout are higher for hybrids, the revenue generated from increased tool up-time can easily compensate for the initial investment.

New ASIC Improves Crystal Startup and Hybrid Reliability

We're pleased with the performance of the new application-specific integrated circuit (ASIC) that oscillates the pressure, temperature, and reference crystals. The ASIC offers rapid crystal startup and eliminates half of the components inside the hybrid. The ASIC will improve the QT/QR crystal reliability since it includes automatic gain control to "kick-start" the crystals. ASIC hybrid transducers will begin shipping this year in both frequency- and digital-output hybrid models.

Frequency-output hybrid models (QH, QM, SP)

There is a specification and a part number change on frequency-output ASIC hybrid models. Customers are required to supply low voltage, 3.6 to 5.5 VDC. Please review the new ASIC electrical specification. A new part number will flag the voltage change: QHB008 --> QHB108. (A '1' will occupy the first numeric digit.)

QH (1") and QM (0.88") will be the first models to switch to the ASIC hybrid this year, and SP (¾") models will switch over next year. On January 1st we will no longer accept orders for old (high voltage) QH and QM transducers. We kindly ask for your cooperation as we phase in the ASIC on new transducer part numbers and phase out the old part numbers. The benefits will be worth the change.

Digital-output hybrid models (DM, DX)

There will be no specification or part number changes since the ASIC does not affect the form, fit, or function of digital transducers.

Increased Capacity Reduces Deliveries to 6 Weeks

Please note that our leadtimes are now 6 weeks. The Quartzdyne team made a tremendous effort this year while adding staff and equipment sufficient for the new level of business. (Our deliveries were 18 weeks in May!) We're also continuing to implement "lean" manufacturing at Quartzdyne to further reduce leadtimes, improve consistency/quality, and increase our capacity.

Discontinuation of 3½" Floppy Disks

Floppy disks have clearly outlived their usefulness. Therefore Quartzdyne will no longer ship a 3½" floppy disk with each transducer after January 1, 2008: coefficients will be served over the web only. We believe that web-based coefficients will improve productivity since all field locations have 24/7 access. Our coefficient service is available at <http://www.quartzdyne.com/customer/coeff/coeff.htm>

There is no need to retrieve coefficients for digital transducers. Since digital transducers include 64 Kb of internal memory, the transducer can be queried for its serial number, part number, coefficients, and calibration date.

Visit Quartzdyne and QE at ATCE

We invite you to visit Quartzdyne and QE in booth 1761 during the Annual Technical Conference and Exhibition in Anaheim, California during November 12-14. Please contact us at sales@quartzdyne.com if you would like a complimentary daypass. We look forward to seeing you there!

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