Lisle, IL – CTS Corporation (NYSE: CTS) has published a white paper presenting the advantages of piezoelectric single crystals for underwater sonar transducers. PIN-/PMN-PT piezoelectric single crystals are among the most important technological advancements for underwater acoustics in recent years.

**Increased Sensitivity and Wider Bandwidth**
CTS PMN-PT and PIN-PMN-PT single crystal piezoelectric materials provide greatly increased sensitivity and much wider bandwidth for underwater transducers. Thus, the performance marks of underwater transducers are much higher when manufactured with piezoelectric single crystal, compared to underwater transducers with the use of standard PZT. Therefore, CTS piezoelectric single crystals have the potential to provide the performance breakthrough for the next generation of underwater sonar transducers.

**Smaller Form Factor and System Level Advantages**
This CTS white paper is based on the study of peer-reviewed scientific research papers. Scientific research data proves that smaller form factor transducers can be achieved when PIN-/PMN-PT single crystals are utilized. This is due to the higher piezoelectric performance magnitude of PIN-/PMN-PT single crystals, thereby making it possible to decrease the number of piezoelectric elements necessary. As a result, higher performance can be achieved at lower power consumption levels. Lower power consumption also helps increase the battery life of the overall sonar system upon deployment. Once the sonar system is deployed, increased battery performance not only provides longer active life for the system, but also improves deployment cycles, maintenance time and cost.

To learn more, download the full CTS white paper, “Next Generation Underwater Sonar Transducers” from the CTS resource center at https://www.ctscorp.com/resource-center/application-notes/.

**CTS Expertise on Piezoelectric Single Crystals**
CTS Corporation is the global leader for high volume single crystal (PMN-PT and PIN-PMN-PT) manufacturing. Utilizing the fully integrated manufacturing facilities in Illinois, United States, CTS can provide high volume, PIN-/PMN-PT single crystal plates (un-diced, diced composite), discs or rings that can be utilized in underwater sonar applications. CTS PIN-/PMN-PT single crystal materials are manufactured to high quality standards in a ISO-9001:2008 certified facility.

**More information**
For further information about piezoelectric single crystals or any of our other products, please visit the CTS corporation form page at: https://www.ctscorp.com/contact/sample-request/.

**About CTS**
CTS (NYSE: CTS) is a leading designer and manufacturer of products that Sense, Connect, and Move. The company manufactures sensors, actuators, and electronic components in North America, Europe, and Asia. CTS provides solutions to OEMs in the aerospace, communications, defense, industrial, information technology, medical, and transportation markets.

For more information on CTS Corporation, please visit www.ctscorp.com.
Technical Information Contact
Hakki Yegingil, Ph.D.
Piezo Product Manager
Email: Hakki.Yegingil@ctscorp.com
Telephone: +1 (630) 754-8602

Media Relations Contact
Dinah A. Fabela
Marketing Communications Manager
Email: MediaRelations@ctscorp.com
Telephone: +1 (630) 577-8865

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