



## INTERQUIP NEWSLETTER

### New factory update

Interquip's new factory in Eastern Shenzhen has been under construction since Sep 2017. Right now the new factory is undergoing internal fit-out and is expected to open in Sep 2018. The new factory is fully owned by Interquip and will facilitate increased production capacity of 100 million pieces per month. Further, the facility will permit dedicated production lines for automotive grade product.

We wish to assure our customers that deliveries will not be disrupted during the transition to the new facility.



### New product launch – SMCM 2016

Interquip is proud to launch its SMCM-2016 series. This series is the product of Interquip's packaging and blank technology, providing a cost-performance-quality balanced timing solution to customers that is pin-to-pin compatible with conventional packages. Supported frequency range is from 24MHz to 48MHz with customizable load capacitance. Tolerance at room temperature is +/-20ppm and temperature characteristic is +/-30ppm @ -20C ~ 85C for general applications. Contact Interquip on [marketing@interquip.com](mailto:marketing@interquip.com) or our representatives and distributors in your area for more details.





## Technical corner – Know the heart of the quartz timing device

Of all the known piezoelectric materials, crystalline silicon dioxide ( $\text{SiO}_2$ ) is the most practical raw material for resonators. This results from the mechanical and chemical stability together with favorable piezoelectric constants. The very small internal frictional losses in the material allow for the manufacture of electromechanical resonators of very high quality factors.

Silicon dioxide in nature is found in different forms. Crystalline quartz is one of these forms. However, quartz of suitable size and necessary purity is seldom found in nature. For that reason the growing process for cultured quartz has been developed. Synthesis is achieved from hot saturated solutions of silicon dioxide in large steel autoclaves at a temperature of approximately  $400^\circ\text{C}$  and a pressure of  $2,000 \text{ kg/sq.cm}$ . Growth of the crystals takes place on seed plates which are suspended in the autoclaves. In order to achieve a high purity and high quality quartz a controlled slow rate of growth is preferred. Natural quartz stones are used as a nutrient in the culturing process. Under the conditions of high temperature and pressure in a caustic aqueous solution the nutrient quartz dissolves and because of a temperature differential which is maintained in the autoclaves, the quartz flows from the nutrient zone of the autoclave to the growth zone. There the quartz nucleates on the seed plates and the crystals grow.

This is an energy intensive process; most companies typically buy ready to process or even ready to assemble crystal blanks for manufacturing activities. Interquip uses ready to process blanks in order to have the ability to custom manufacture to customers' specifications.

