Crystal Oscillator - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 100 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

Report description:

The Crystal Oscillator Market size is estimated at USD 2.99 billion in 2024, and is expected to reach USD 3.60 billion by 2029, growing at a CAGR of 3.80% during the forecast period (2024-2029).

Crystal devices like quartz crystal units and crystal oscillators have high stability against environmental changes. Therefore, they are used as frequency control devices in electronic circuits.

Key Highlights
-The increasing demand for convenience is driving the application of wireless interconnections, such as remote keyless entry. The application of crystal units and crystal oscillators in automobiles is expected to increase during the forecast period.
-Crystal oscillators, such as brake control, anti-blocking systems, airbags, and tire pressure monitoring systems (TPMS), are widely used in safety applications. The demand for precision, coupled with growing requirements, improving regulations for safety applications, and the necessity for fast data transmission, is driving the adoption of crystal units and oscillators.
-The demand for crystal oscillators has increased with the use of WiFi and Bluetooth combo chipsets in smartphone applications. Considering the increasing support for these applications in consumer products, the consumer electronics segment is expected to witness strong potential growth during the forecast period.
-However, many other variants of oscillators in the market offer strong competition to quartz crystal oscillators, restraining the market growth. For instance, MEMS resonator-based oscillators increase ruggedness and are smaller than crystal oscillators; they can potentially replace them in many applications.
-COVID-19 halted the manufacturing operations of many electronic devices, one of the primary areas of applications of crystal oscillators. Besides, the supply chain disruptions caused by the pandemic affected the procurement of raw materials for many major manufacturers. However, with the pandemic-related restrictions easing up in most regions around the globe, the market

has started picking up and is expected to witness steady growth in the coming years.

Crystal Oscillator Market Trends

Consumer Electronics Segment is Expected to Hold the Prominent Share

- Frequent new launches of consumer electronic products are expected to fuel the market for crystal oscillators. Crystal oscillators are used in cable television systems, personal computers, digital cameras, radio systems, smartphones, and wearables.
- The growing penetration of smartphones is also creating significant demand for crystal oscillators. Usually, a smartphone has one or two 3 x 1.5 mm low-power 32 kHz quartz crystal oscillators, one primarily used for sleep-mode timing next to the baseband processor and the other commonly used to drive the power management chips.
- TXC Corporation's SMD Crystal Oscillators with CMOS Output, 8N, and 8R Series, are designed with specifications of an output frequency range of 4-54 MHz, supply voltage up to 3.63 V, and frequency stability at 25, 50, and 100 ppm, for making them ideal for smartphones and sip modules, among other compact portable consumer products.?
- Wireless data exchange has emerged as one of the most critical application areas for frequency components. This is applicable to wearables, such as fitness wristbands and smartwatches, which transmit the data to the wearer's smartphone, and to intelligent production machines that communicate with each other as part of IoT applications. In all such cases, quartz crystals provide precise radio frequencies and ensure that the transmitter and receiver are on the same wavelength.
- For consumers, while making a purchase, the battery life of wearables is a key factor. In order to maximize the battery life, developers leverage the extended idle time by placing microcontrollers and other power-consuming components in a low-power sleep state. However, even in the lowest power sleep states, the systems need a real-time clock (RTC) to maintain the wall clock time and manage the scheduled events.

North America is Expected to Hold Significant Market Share

- The United States is emerging as a potential market for crystal oscillator manufacturers. The country's semiconductor and other electronic component manufacturing sectors produce a range of input devices necessary for electronics production, including circuits and memory chips.
- The industry has witnessed expansion over the past few years despite continued offshoring and greater competition from other regional manufacturers. The primary factor for this has been the growing demand for industry products, both domestically and abroad, and a global shortage of electronic components, which increased the prices of certain products. This offers a massive opportunity for regional studied market vendors.
- The country is home to some of the major automotive manufacturers, which is expected to create a demand for automotive equipment. Additionally, the increasing penetration of electric vehicles in the region is creating growth opportunities for the vendors operating in the market. For instance, in October 2022, Magna International announced the development of two new manufacturing facilities and the expansion of a third facility in Michigan to develop components specifically for electric vehicles.
- Moreover, the increasing penetration of smartphones and IoT-based devices in the region proliferates the demand for crystal oscillators. A typical smartphone or tablet uses up to five oscillators. According to Ericsson Mobility Report, 5G subscriptions in North America grew by 110 million during the third quarter of 2022 to around 870 million, and the number is expected to reach 1 billion by the end of 2022. Moreover, the company anticipates the region would have the highest 5G penetration at 91%. Additionally, as per Cisco, the region will have 329 million mobile users in early 2023, up from 313 million in 2018.
- The increasing development in the aerospace and defense industry also fuels the market. In Feb 2022, Orca Systems, a fabless semiconductor company delivering digital RF technology, announced its first wireless system-on-chip (SoC) solution for the

satellite Internet of Things (IoT), the ORC3990. Components used in the ORC 3990 include a temperature-compensated crystal oscillator (TCXO), passive filters, and switches, among others.

Crystal Oscillator Industry Overview

The crystal oscillator market is semi-consolidated and consists of various major players. Some of the major players in the market are Murata Manufacturing Co. Ltd., Seiko Epson Corporation, Kyocera Corporation, Rakon Ltd., and Vectron International Inc. (Microchip Technology). Players in the market are adopting strategies such as partnerships and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

- July 2023 - Kyocera Corporation has released its (OCXO) products, where KYOCERA AVX's new KOV Series standard voltage-controlled OCXOs employ modern layout topologies and robust designs that deliver outstanding performance in these and other applications, enabling customers to achieve a very stable frequency which can be achieved via a sinewave or a superstable timing source such as CMOS clock output.
- August 2022 - Rakon launched the RPT7050LG, a low g-sensitivity TCXO with high stability in a 7.0 x 5.0 x 1.5 mm package size. It is one of the most advanced compact low-g-sensitivity TCXOs on the market, with a guaranteed sensitivity of 0.1 ppb/g.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

Crystal Oscillator - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 100 pages | Mordor Intelligence

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4750.00
	Team License (1-7 Users)	$5250.00
	Site License	$6500.00
	Corporate License	$8750.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2026-03-01
		Signature