



**Hong Kong X'tals Ltd**  
**Hong Kong Automotive X'tals Ltd**






# The Right Timing for Internet of Things



## High Precision Crystals for IoT applications

±20 to ±40ppm frequency accuracy including room temperature tolerance, stability over operating temperature and aging.

**Ideal for IoT devices with Bluetooth Smart, Bluetooth Low Energy, WiFi, ZigBee and sub-1GHz**

Series	Dimension	Frequency Range	Frequency Tolerance	Frequency Stability	Operating Temperature	Features
 CQ	2.0 x 1.6 mm	16MHz ~ 72MHz	±10 ppm	±10 / 20 ppm	-20 ~ +70°C	Extremely small form factor for wearable devices
 CK	2.5 x 2.0 mm	16MHz ~ 80MHz	±10 ppm	±10 / 20 ppm	-20 ~ +70°C	Small footprint for most advance IoT applications
 C7	3.2 x 2.5 mm	8MHz ~ 150MHz	±10 ppm	±10 / 20 ppm	-20 ~ +70°C	Best balance of cost performance in common package size
 P8	3.2 x 1.5 mm	32.768KHz	±20 ppm	-0.04ppm/°C <sup>2</sup>	-20 ~ +70°C	Low frequency standby clock in small footprint
 2T	Φ2 x 6 mm	32.768KHz	±20 ppm	-0.04ppm/°C <sup>2</sup>	-20 ~ +70°C	Most cost effective in famous industry standard package

Other packages and precisions are available upon requests



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ISO/TS 16949:2009  
 Certificate IATF 0167724  
 Certificate SGS HK04/01017/01



ISO 14001:2004  
 Certificate HK 11/00059



ISO 9001:2008  
 Certificate HK 10/00316



OHSAS 18001:2007  
 Certificate CN 12/00611



# High Precision Crystals for IoT applications



## Specific Crystals for common IoT chips:

IC Manufacturer	IC Number	Frequency	Crystal Series	Dimension	Ordering Code	
Nordic Semiconductor	nRF51824 nRF51822 nRF51422	32 MHz	CK		2.5 x 2.0 mm	2520M3200LC01
		16 MHz	CK		2.5 x 2.0 mm	2520M1600LC01
	nRF24LE1 nRF24LU1 nRF24L01	16 MHz	C7		3.2 x 2.5 mm	3225M1600LC01
	nRF24AP2	16 MHz	C7		3.2 x 2.5 mm	3225M1600LC03
			CK		2.5 x 2.0 mm	2520M1600LC02
	nRF905 nRF9E5	16 MHz	C7		3.2 x 2.5 mm	3225M1600LC02
	nRF8001 nRF8002	16 MHz	C7		3.2 x 2.5 mm	3225M1600LC04
			CQ		2.0 x 1.6 mm	2016M1600LC01
nRF51/24/80 series	32.768 KHz	P8		3.2 x 1.5 mm	3215K3276LC01	
ST Microelectronics	STM32LWP	24 MHz	CK		2.5 x 2.0 mm	2520M2400LC01
		32.768 KHz	P8		3.2 x 1.5 mm	3215K3276LC01
Texas Instruments	CC2541	32 MHz	C7		3.2 x 2.5 mm	3225M3200LS01
	CC3200	40 MHz	C7		3.2 x 2.5 mm	3225M4000LC01
		32.768 KHz	2T		φ2 x 6 mm	2060K3276LC01
CSR	CSR1010	16 MHz	CK		2.5 x 2.0 mm	2520M1600LS01
			C7		3.2 x 2.5 mm	3225M1600LS01
	CSR8510	26 MHz	C7		3.2 x 2.5 mm	3225M2600LB01

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