



Crystal Oscillators for New Space Applications

The low-earth orbit (LEO) satellite realm has spawned an entirely new class of devices requiring innovations in crystal oscillator products to meet performance and price benchmarks. Q-Tech and AXTAL have developed a range of devices (XOs, TCXOs, OCXOs and MCXOs) to provide optimized price and performance for New Space.



Crystal Oscillators (XOs)

A wide selection of XOs in small surface mount and standard leaded versions.

Key Features

- Screening per MIL-PRF-55310, Level B, with PIND
- High Shock Resistant Tested Up to 20,000g
- Mechanical Shock, Half-Sine, 0.3ms, All Axes
- Voltage: 1.8, 2.5, 3.3, 5.0Vdc
- Output Waveform: CMOS, LVDS
- Crystal Type: Non-Swept

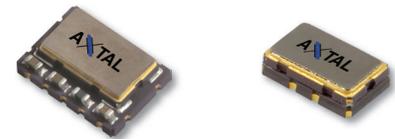
Product Line	QT723 Series	QT735 Series	QT780 Series
Frequency	1.5 - 133MHz	1 - 250MHz	225kHz - 162.5MHz
Stability	±25ppm (limited) ±50ppm (standard)		
Temperature Range	-55°C to 125°C		
Radiation	50kRad(Si) TID		
SEL	Contact Factory		
Phase Noise	Contact Factory		
Crystal Mount	2-point		2-point and 3-point
Size	2.5 x 3.2 mm	3.2 x 5.0 mm	5 x 7 to 7 x 9 mm

Temperature Compensated Crystal Oscillators (TCXOs)

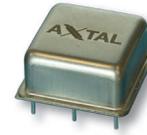
TCXOs deliver tighter frequency stability performance in small package options.

Key Features

- Screening per MIL-PRF-55310, Level S
- Voltage: 3.3Vdc
- Output: Clipped Sine Wave, CMOS on request
- Crystal: Non-Swept, Swept on request
- Crystal Mount: 2-point



Product Line	AXLE7050S	AXLE5032S
Frequency	10 - 50MHz	
Stability	±1 to ±3ppm	
Temperature Range	-40°C to 85°C	
Radiation	40kRad(Si) TID	
SEL	120MeV-cm ² /mg	
Phase Noise	Contact Factory	
Size	7.0 x 5.0 x 1.8 mm	5.0 x 3.2 x 1.7 mm



Oven Controlled Crystal Oscillators (OCXOs)

OCXOs provide ppb stability for LEO applications.

Key Features

- Screening per MIL-PRF-55310, Level S
- Voltage: 5.0, 12Vdc
- Output Waveform: Sine Wave, CMOS

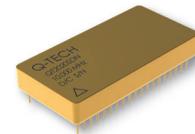
Product Line	AXIOM70SL	AXIOM75SL	AXIOM75SH	AXIOM3838S
Frequency	10MHz		80 - 125MHz	10MHz
Stability	±10ppb	±10ppb	±50ppb	±10ppb
Temperature Range	-20°C to 70°C			
Radiation	10kRad(Si) TID	40kRad(Si) TID		
SEL	Consult Factory	Immune		
Phase Noise (@>10kHz)	Consult Factory			-160dBc/Hz
Crystal	Non-Swept	Swept on Request		
Crystal Mount	2-point			4-point
Size	25 x 25 x 13 mm			38 x 38 x 19 mm

Microcomputer Compensated Crystal Oscillators (MCXOs)

RAD tolerant OCXO performance with 90mW maximum power consumption.

Key Features

- Power Consumption: 90mW max
- Maximum Aging: ±1.5ppm over 20 years
- Screening per MIL-PRF-55310, Level B (Modified)
- Voltage: 3.3Vdc
- Output Waveform: Sine wave, CMOS



Product Line	QT2020	QT2021
Frequency Range	5 - 100MHz	
Stability	±10ppb to ±30ppb	
Temperature Range	-40°C to 85°C	
Radiation	50kRad(Si) TID	
SEL	29MeV-cm ² /mg	75MeV-cm ² /mg
Phase Noise	Contact Factory	
Crystal	Swept	
Crystal Mount	4-point	
Size	1.0 x 2.0 x 0.33 in	