Low Phase Noise Oscillators

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@IQD Frequency Products

	IQXO-406 & IQXO-439	IQXO-408 & IQXO 455	IQXT-311	IQOV-210F	IQOV-220	IQRB-2
Key Features	Best high frequency dual output SPXO	Best performing SPXOs	Best performing TCXO	Best noise floor	Best close in phase noise	Best rubidium oscillator
Package Size (mm)	2.0 x 1.6 x 0.8	2.5 x 2.0 x 0.95 (408) 3.2 x 2.5 x 1.1 (455)	5.0 x 3.2 x 2.4	25.4 x 25.4 x 13.5	36 x 27 x 15	101.2 x 60.7 x 37.7
Frequency Range	50 to 250 MHz	20 to 50 MHz	10 to 40 MHz	100 MHz	10 MHz	10 MHz
Stability	50 ppm	25 ppm	50 ppb	10 ppb	0.5 ppb	0.3 ppb
Supply Voltage	2.5 V & 3.3 V	1.8 V, 2.5 V & 3.3 V	3.0 V. 3.3 V & 5.0V	5 V & 12 V	12 V	12 V
Power Draw	40 mA	10 mA	2 mA (C-Sine) 4 mA (CMOS)	2 W	1.2 W	6 W
Output Compatibility	LVDS / LVPECL	CMOS	CMOS, Clipped Sine	Sinewave	Sinewave	Sinewave
Phase Noise (typical)	125 MHz 3.3 V	20 MHz 3.3 V	19.2 MHz	100 MHz 12 V	10 MHz 12 V	10 MHz 12 V
1 Hz			-70		-118	-113
10 Hz	-64	-113	-96	-110	-140	-138
100 Hz	-94	-140	-130	-140	-152	-152
1 kHz	-124	-158	-147	-165	-155	-155
10 kHz	-145	-166	-154	-176	-160	-158
100 kHz	-153	-175	-156	-180	-160	-158
1 MHz	-154	-175	-157			-153

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General Overview

Clocks need to have not only a stable, but also an accurate frequency. Clock accuracy is broken down into several components. Phase noise (PN) is a measurement of oscillator noise in the frequency domain. PN close to the carrier is predominantly caused by the Q factor of the resonator. PN far from the carrier is predominantly caused by the oscillator circuit. Many applications will have some filtering effect caused by the sample rate, refresh rate, loop bandwidth, baud rate, or other parameters. This will dictate which part of the PN is significant for the application. For example SONET applications naturally filter noise outside the 12 kHz to 20 MHz bandwidth.

Want to Know More?

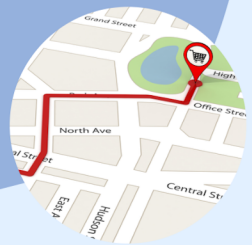
Head to our website by scanning below to view detailed datasheets of our complete product range!

Applications

IQD's low phase noise oscillators can be used for a diverse range of applications

Telecommunications

Navigation



Instrumentation

Defense / Aerospace

Broadcast

Some examples for applications include:

- Radar
- High end audio
- High precision test equipment
- Measurement and verification
- Satellite systems
- High speed data systems