



FREQUENCY PRODUCTS SELECTION GUIDE

Watch Crystals (kHz)
Quartz Crystals (MHz)
Clock Oscillators (kHz)
Clock Oscillators (MHz)
VCXOs
TCXOs/VCTCXOs
OCXOs
Disciplined OCXOs
Rubidium Oscillators
Automotive Crystals & Oscillators (AEC-Q200)
Technical Support Services



Quality, Compliance & Environmental Management

IQD is committed to ensuring the highest level of quality & environmental consideration in its products and services and to continual improvement throughout all levels of the business. IQD has implemented and maintains a fully integrated quality & environmental management system in accordance with the requirements of **ISO 9001:2015 & ISO 14001:2015**.

Quality Policy

Quality and customer service are the cornerstones of our success and we are absolutely focussed on consistently meeting and exceeding customer expectations.

IQD actively engenders a culture of constant improvement to achieve the highest standards and is committed to meeting all requirements.

Automotive Components

IQD offers automotive grade components for non-safety critical applications which are manufactured on an **IATF 16949:2016** certified production line. Automotive products are qualified against the reliability testing requirements of **AEC Q-200**, which is the stress test qualification requirements standard for passive components. PPAP levels 1-4 are available on request.

Compliance - ROHS & REACH

Restriction of Hazardous Substances (2011/65/EU) (RoHS) & UK SI 2012 No. 3032.

IQD complies with both the EU directive on RoHS and the UK statutory instrument which was recently amended. Please note some products do contain restricted chemicals covered by exemption.

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) EC 1907/2006 & UK REACH.

IQD complies with both the EU directive on REACH and the UK REACH recently enacted into law on 1 January 2021. Please note that some products do contain SVHCs >0.1%w/w notifiable down the supply chain.

Other Compliance Obligations

- Conflict Minerals
- China RoHS
- TSCA Chemicals
- CA Prop 65

For specific information relating to compliance policy and product status, please enquire with the IQD quality department directly.



UK Authorised Economic Operator

IQD Frequency Products Ltd has been awarded Authorised Economic Operator (AEO) status by HMRC. AEO certification demonstrates that IQD's role within the international supply chain is secure and that the customs controls and procedures are efficient and compliant.

Environmental Policy

IQD acknowledges the potential and actual impacts associated with its business operations and has identified these impacts within the context of its operation.

IQD pledges to be committed to the protection of the environment. To learn more about our Environmental Policy, please refer to our website.

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IQD has been a recognised market leader in the frequency products market since 1973. The company has invested in its design and technical measurement capabilities at its head office in the UK, which also acts as the centre of excellence for frequency products within the **Würth Elektronik eiSos Group**. This service, combined with excellent product quality and reliability, makes IQD the best choice for your frequency product and timing requirements.

With active customers in over 80 countries, IQD offers one of the most comprehensive frequency product ranges available; from low cost commercial grade timing devices to those used in high reliability industrial and automotive applications including: Quartz Crystals, Clock Oscillators, AEC-Q200 Crystals & Oscillators, VCXOs, TCXOs, OCVXOs & OCXOs, GPS Disciplined OCXOs, and Rubidium Oscillators.

Manufacturing capacity totals over 40 million units per month covering quantities from one off specials to multi-million unit orders. In addition, IQD offers customers a range of engineering support services including: application support, custom product design, sample development, electrical testing & screening, frequency/temperature testing, accelerated ageing, circuit characterisation and MTIE/TDEV testing.

IQD's products are specified by leading manufacturers in the aerospace, automotive, communications, computing, consumer and industrial industries throughout the world. The full range of products is available direct through sales offices or via an extensive worldwide distribution network.

Quartz Crystals

Products stocked at Würth Elektronik are highlighted in blue

Surface Mount

Model	Package	Frequency Range	Frequency Tolerance (Tightest)	Frequency Stability (Tightest)	Operating Temperature Range (Widest)	Key Feature
IQXC-240	1.2 x 1.0 mm	32 to 80 MHz	±7 ppm	±10 ppm	-40 to 85 °C	Miniature package
IQXC-26	1.6 x 1.2 mm	24 to 80 MHz	±10 ppm	±10 ppm	-40 to 85 °C	Industry standard 4 Pad
IQXC-42	2.0 x 1.6 mm	16 to 50 MHz	±10 ppm	±10 ppm	-40 to 125 °C	Industry standard 4 Pad
IQXC-153	2.0 x 1.6 mm	20 to 200 MHz	±10 ppm	±10 ppm	-40 to 85 °C	High fundamental frequency
CFPX-218	2.5 x 2.0 mm	12 to 50 MHz	±10 ppm	±10 ppm	-40 to 85 °C	Industry standard 4 Pad
IQXC-152	2.5 x 2.0 mm	16 to 200 MHz	±10 ppm	±10 ppm	-40 to 85 °C	High fundamental frequency
CFPX-180	3.2 x 2.5 mm	10 to 200 MHz	±10 ppm	±10 ppm	-40 to 125 °C	Industry standard 4 Pad
IQXC-49	5.0 x 3.2 mm	8 to 125 MHz	±10 ppm	±10 ppm	-40 to 85 °C	Industry standard 2 Pad
CFPX-104	5.0 x 3.2 mm	8 to 133 MHz	±10 ppm	±10 ppm	-40 to 85 °C	Industry standard 4 Pad
12SMX	7.0 x 5.0 mm	6 to 84 MHz	±20 ppm	±20 ppm	-40 to 85 °C	Industry standard 2 & 4 Pad
HC49/4HSMX	13.4 x 4.9 mm	3.2 to 100 MHz	±10 ppm	±15 ppm	-55 to 105 °C	Industry standard metal can SMD

Through Hole

Model	Package	Frequency Range	Frequency Tolerance (Tightest)	Frequency Stability (Tightest)	Operating Temperature Range (Widest)	Key Feature
HC49	11.05 x 4.65 mm	1.8432 to 270 MHz	±5 ppm	±5 ppm	-55 to 125 °C	Industry standard metal can
HC49/4H	11.05 x 4.7 mm	3.2 to 100 MHz	±10 ppm	±15 ppm	-55 to 105 °C	Industry standard metal can

32.768 kHz

Model	Package	Frequency	Frequency Tolerance (Tightest)	Frequency Stability (Tightest)	Operating Temperature Range (Widest)	Key Feature	SMD
IQXC-146	1.2 x 1.0 mm	32.768 kHz	±20 ppm	-0.036 / °C ²	-40 to 85 °C	Low height 0.5 mm	✓
IQXC-90	1.6 x 1.0 mm	32.768 kHz	±20 ppm	-0.036 / °C ²	-40 to 85 °C	Low height 0.5 mm	✓
IQXC-25	2.0 x 1.2 mm	32.768 kHz	±10 ppm	-0.03 / °C ²	-40 to 85 °C	Low height 0.6 mm	✓
CFPX-56	∅ 2.0 x 6.0 mm	32.768 kHz	±20 ppm	-0.034 / °C ²	-40 to 85 °C	Pre-Formed legs for SMD	✓
Cylinder Watch	∅ 2.0 x 6.0 mm, ∅ 3.0 x 8.0 mm	32.768 kHz	±10 ppm	-0.035 / °C ²	-10 to 60 °C	Industry standard	
CFPX-217	3.2 x 1.5 mm	32.768 kHz	±10 ppm	-0.034 / °C ²	-40 to 85 °C	Industry standard	✓
85SMX	8.7 x 3.8 mm	32.768 kHz	±10 ppm	-0.035 / °C ²	-40 to 85 °C	Industry standard	✓
IQXC-217	3.2 x 1.5 mm	32.768 kHz	±20 ppm	-0.036 / °C ²	-40 to 85 °C	Industry standard	✓

Clock Oscillators

Industry Standard (SMD)

Model	Package	Supply Voltage	Output Compatibility	Frequency Range	Frequency Stability (Tightest)	Operating Temperature Range (Widest)
IQXO-640 / 641 / 642	1.6 x 1.2 mm	1.8, 2.5, 3.3 V	CMOS	3 to 80 MHz	±30 ppm	-40 to 85 °C
IQXO-951 2016	2.0 x 1.6 mm	1.62 to 3.63 V	CMOS	2 to 50 MHz	±25 ppm	-40 to 125 °C
IQXO-540 / 541 / 542	2.0 x 1.6 mm	1.8, 2.5, 3.3 V	CMOS	1 to 80 MHz	±25 ppm	-40 to 85 °C
IQXO-406	2.0 x 1.6 mm	2.5, 3.3 V	LVDS	50 to 250 MHz	±50 ppm	-40 to 85 °C
IQXO-439	2.0 x 1.6 mm	2.5, 3.3 V	LVPECL	50 to 250 MHz	±50 ppm	-40 to 85 °C
IQXO-931	2.5 x 2.0 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±10 ppm	-40 to 85 °C
IQXO-951 2520	2.5 x 2.0 mm	1.62 to 3.63 V	CMOS	2 to 50 MHz	±25 ppm	-40 to 125 °C
IQXO-791 / 793 / 794	2.5 x 2.0 mm	1.8, 2.5, 3.3 V	HCMOS	1 to 66 MHz	±20 ppm	-40 to 85 °C
IQXO-951 3225	3.2 x 2.5 mm	1.62 to 3.63 V	CMOS	1 to 54 MHz	±20 ppm	-40 to 125 °C
CFPS-39 / 40 / 41	3.2 x 2.5 mm	1.8, 2.5, 3.3 V	CMOS	2 to 125 MHz	±25 ppm	-40 to 85 °C
IQXO-740 / 741	3.2 x 2.5 mm	2.5, 3.3 V	LVDS	80 to 160 MHz	±20 ppm	-40 to 85 °C
CFPS-36	5.0 x 3.2 mm	1.8 V	CMOS	0.5 to 156 MHz	±20 ppm	-40 to 85 °C
CFPS-37	5.0 x 3.2 mm	2.5 V	CMOS	1.8 to 125 MHz	±25 ppm	-40 to 85 °C
CFPS-9	5.0 x 3.2 mm	3.3 V	HCMOS	0.5 to 160 MHz	±25 ppm	-40 to 85 °C
CFPS-31 / 32	7.0 x 5.0 mm	1.8 V, 2.5 V	CMOS	0.5 to 156.25 MHz	±25 ppm	-40 to 85 °C
IQXO-620 / 621 / 660 / 661	7.0 x 5.0 mm	2.5, 3.3 V	LVDS/LVPECL	15 to 160 MHz	±25 ppm	-40 to 85 °C
CFPS-73	7.0 x 5.0 mm	3.3 V	HCMOS	0.5 to 157 MHz	±20 ppm	-40 to 85 °C
CFPS-72	7.0 x 5.0 mm	5.0 V	HCMOS/TTL	0.5 to 100 MHz	±25 ppm	-40 to 85 °C

Low Voltage (SMD)

Model	Package	Supply Voltage	Output Compatibility	Frequency Range	Frequency Stability (Tightest)	Operating Temperature Range (Widest)
IQXO-691 2520	2.5 x 2.0 mm	0.9, 1.2, 1.5 V	CMOS	10 to 50 MHz	±20ppm	-40 to 85 °C
IQXO-691 3225	3.2 x 2.5 mm	0.9, 1.2, 1.5 V	CMOS	10 to 50 MHz	±20 ppm	-40 to 85 °C
IQXO-691 5032	5.0 x 3.2 mm	0.9, 1.2, 1.5 V	CMOS	10 to 50 MHz	±20 ppm	-40 to 85 °C
IQXO-691 7050	7.0 x 5.0 mm	0.9, 1.2, 1.5 V	CMOS	10 to 50 MHz	±20 ppm	-40 to 85 °C

Clock Oscillators

Low Phase Noise/Low Jitter (SMD)

Model	Package	Supply Voltage	Output Compatibility	Frequency Range	Frequency Stability (Tightest)	Operating Temperature Range (Widest)	Phase Jitter (12 kHz to 20 MHz)
CFPS-112 / 113 / 114 / 115	2.5 x 2.0 mm	1.8, 2.5, 3.0, 3.3 V	CMOS	26 to 44 MHz	±30 ppm	-40 to 85 °C	0.25 ps typ
IQXO-408	2.5 x 2.0 mm	1.8, 2.5, 3.3 V	CMOS	20 to 50 MHz	±25 ppm	-40 to 85 °C	0.047 ps typ
IQXO-455	3.2 x 2.5 mm	1.8, 2.5, 3.3 V	CMOS	20 to 50 MHz	±25 ppm	-40 to 85 °C	0.040 ps typ
IQXO-593	3.2 x 2.5 mm	2.5, 3.3 V	LVPECL	40 to 250 MHz	±25 ppm	-40 to 85 °C	0.165 ps typ
IQXO-618	3.2 x 2.5 mm	2.5, 3.3 V	LVDS	13.5 to 156.25 MHz	±25 ppm	-40 to 85 °C	1 ps typ
IQXO-623 / 624	3.2 x 2.5 mm	2.5, 3.3 V	LVPECL	13.5 to 156.25 MHz	±25 ppm	-40 to 125 °C	0.17 ps typ, 1 ps max
IQXO-935	5.0 x 3.2 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	1 to 200 MHz	±10 ppm	-10 to 70 °C	0.3 ps max
IQXO-940	5.0 x 3.2 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±10 ppm	-40 to 85 °C	0.5 ps max
IQXO-944	7.0 x 5.0 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	1 to 640 MHz	±10 ppm	-40 to 85 °C	0.03 ps min to 0.5 ps max
IQXO-942	7.0 x 5.0 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±10 ppm	-40 to 85 °C	0.5 ps max

32.768 kHz (SMD)

Model	Package	Supply Voltage	Output Compatibility	Frequency	Frequency Stability (Tightest)	Operating Temperature Range (Widest)
IQXO-984 / 985 / 986	1.6 x 1.2 mm	1.8, 2.5, 3.3 V	CMOS	32.768 kHz	±30 ppm	-40 to 85 °C
IQXO-402 / 403 / 404	2.0 x 1.6 mm	1.8, 2.5, 3.3 V	CMOS	32.768 kHz	±25 ppm	-40 to 125 °C
CFPS-107 / 108 / 109	2.5 x 2.0 mm	1.8, 2.5, 3.3 V	CMOS	32.768 kHz	±20 ppm	-40 to 85 °C
CFPS-102 / 103 / 104	3.2 x 2.5 mm	1.8, 2.5, 3.3 V	CMOS	32.768 kHz	±20 ppm	-40 to 85 °C

Voltage Controlled Oscillators (SMD)

Model	Package	Supply Voltage	Output Compatibility	Frequency Range	Pulling	Operating Temperature Range (Widest)	Key Feature
IQXV-83	2.5 x 2.0 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±35 ppm min APR	-40 to 85 °C	Low jitter (0.5 ps)
IQXV-85	5.0 x 3.2 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±50 ppm min APR	-40 to 85 °C	Low jitter (0.5 ps), Tight stability ±10 ppm
IQXV-84	5.0 x 3.2 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±50 ppm min APR	-40 to 85 °C	Low jitter (0.9 ps), Tight stability ±10 ppm
IQXV-86	5.0 x 3.2 mm	3.3 V	CMOS, LVPECL, LVDS	1 to 800 MHz	±50 ppm min APR	-40 to 85 °C	Ultra low jitter (0.05 to 0.3 ps), Tight stability ±10 ppm
IQXV-89	7.0 x 5.0 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	1 to 800 MHz	±50 ppm min APR	-40 to 85 °C	Ultra low jitter (0.05 to 0.3 ps)
IQXV-88	7.0 x 5.0 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±50 ppm min APR	-40 to 85 °C	Low jitter (0.5 ps)
IQXV-87	7.0 x 5.0 mm	2.5, 3.3 V	CMOS, LVPECL, LVDS	8 to 1500 MHz	±50 ppm min APR	-40 to 85 °C	Low jitter (0.9 ps)

Pulling

VCXO pulling can be specified in one of two ways:

Minimum Pulling: This defines the frequency change which will be seen when varying the control voltage input. The range is with reference to the nominal frequency, i.e. the frequency at the midpoint of the pulling range.

Absolute Pulling Range (APR): This definition takes into account the frequency tolerance and stability and gives the remaining pulling. This specifies the pulling from the nominal frequency which is guaranteed to be met across the full operating temperature range.

For example, if a VCXO will change by ±50 ppm over temperature and has a pulling range of >±200 ppm, therefore the minimum pulling is ±200 ppm, however the APR would be ±150 ppm.

Temperature Compensated Crystal Oscillators (SMD)

Model	Package	Supply Voltage	Output Compatibility	Frequency Range	Frequency Stability (Tightest)	Operating Temperature Range (Widest)	Key Feature	Voltage Control Option
IQXT-350	1.6 x 1.2 mm	1.8 V	Clipped Sine	26 & 52 MHz	±0.5 ppm	-40 to 85 °C	Miniature package	
IQXT-205-1	2.0 x 1.6 mm	1.8 V	Clipped Sine	16.38, 16.39, 19.2, 26, 33.6, 38.4 & 52MHz	±0.5 ppm	-30 to 85 °C	Industry standard	
IQXT-205-2	2.0 x 1.6 mm	1.8 V	Clipped Sine	16.38 to 52 MHz	±0.5 ppm	-30 to 85 °C	Industry standard with VC	✓
IQXT-205-3	2.0 X 1.6 mm	1.8, 3.3 V	Clipped Sine	33.6, 26 & 38.4 MHz	±0.5 ppm	-40 to 105 °C	High temperature	
IQXT-220	3.2 x 2.5 mm	3.3 V	Clipped Sine	10 to 40 MHz	±0.28 ppm	-40 to 85 °C	Tight stability	✓
IQXT-192	3.2 x 2.5 mm	1.8, 2.5, 2.8, 3.0, 3.3 V	Clipped Sine	8.192 to 52 MHz	±1 ppm	-30 to 85 °C	Low Power 2 mA	✓
CFPT-9302	5.0 x 3.2 mm	3.0 V	Clipped Sine	12 to 52 MHz	±0.2 ppm	-40 to 85 °C	MTIE/TDEV	✓
CFPT-9301	5.0 x 3.2 mm	3.3 V	HCMOS	1.5 to 52 MHz	±0.2 ppm	-40 to 85 °C	MTIE/TDEV	✓
IQXT-210	5.0 x 3.2 mm	3.3 V	HCMOS, Clipped Sine	10 to 50 MHz	±0.14 ppm	-40 to 105 °C	Ultra tight stability	✓
IQXT-318	5.0 x 3.2 mm	3.0, 3.3 V	HCMOS, Clipped Sine	19.2 to 40 MHz	-	-40 to 85 °C	-157 dBc/Hz	✓
IQXT-311	5.0 x 3.2 mm	3.3, 5.0 V	Clipped Sine, HCMOS, Sine	1.25 to 52 MHz	-	-55 to 105 °C	-160 dBc/Hz @1 MHz	
CFPT-9006	7.0 x 5.0 mm	3.3 V	HCMOS	1.25 to 40 MHz	±0.3 ppm	-40 to 85 °C	Tri-State <1.0 mA	✓
CFPT-9007	7.0 x 5.0 mm	3.3 V	Sine	10 to 40 MHz	±0.3 ppm	-40 to 85 °C	Tri-State <1.0 mA	✓
CFPT-9008	7.0 x 5.0 mm	3.3 V	Clipped Sine	10 to 40 MHz	±0.3 ppm	-40 to 85 °C	Tri-State <1.0 mA	✓
IQXT-200	7.0 x 5.0 mm	3.3 V	HCMOS, Clipped Sine	10 to 50 MHz	±0.05 ppm	-40 to 105 °C	MTIE/TDEV	✓
IQXT-316	7.0 x 5.0 mm	3.0, 3.3 V	HCMOS, Clipped Sine	19.2 to 40 MHz	-	-40 to 85 °C	-157 dBc/Hz	✓
CFPT-9001	7.0 x 5.0 mm	5.0 V	HCMOS	1.25 to 40 MHz	±0.3 ppm	-40 to 85 °C	Tri-State <1.0 mA	✓
CFPT-9005	7.0 x 5.0 mm	5.0 V	Clipped Sine	10 to 40 MHz	±0.3 ppm	-40 to 85 °C	Tri-State <1.0 mA	✓
CFPT-9003	7.0 x 5.0 mm	5.0 V	Sine	10 to 40 MHz	±0.3 ppm	-40 to 85 °C	Tri-State <1.0 mA	✓

OCXOs & Disciplined OCXOs

Oven Controlled Crystal Oscillators

Model	Package	Supply Voltage	Output Compatibility	Frequency Range	Phase Noise @ 100 kHz	Frequency Stability (Tightest)	Operating Temp. Range (Widest)	Key Feature	SMD
IQMT-100	7.0 x 5.0 mm	3.3 V	HCMOS, Clipped Sine	10 to 50 MHz	-148 dBc/Hz typ	±50 ppb	-40 to 85 °C	OCXO performance in TCXO sized package	✓
IQOV-71	9.7 x 7.5 mm	3.3, 5.0 V	HCMOS, Clipped Sine	5 to 50 MHz	-153 dBc/Hz typ	±10 ppb	-40 to 85 °C	Ultra miniature OCXO	✓
IQOV-162	14 x 9.0 mm	3.3 V	HCMOS, Sine	10 to 100 MHz	-150 dBc/Hz typ	±10 ppb	-40 to 85 °C	Short term stability 0.1 ppb	✓
IQOV-72	14 x 9.0 mm	3.3, 5.0 V	HCMOS, Clipped Sine	5 to 50 MHz	-163 dBc/Hz typ	±10 ppb	-40 to 85 °C	Low power (0.4 W)	✓
IQOV-160	14-pin DIL	3.3 V	HCMOS	5 to 100 MHz	-160 dBc/Hz typ	±5 ppb	-40 to 85 °C	Tight stability	
IQOV-74	14-pin DIL	2.7 to 5.5 V	HCMOS, Clipped Sine	10 to 26 MHz	-155 dBc/Hz typ	±10 ppb	-40 to 85 °C	Low ageing	
IQOV-114	20.32 x 12.7 mm	3.3 V	HCMOS	8.192 to 30.72 MHz	-155 dBc/Hz typ	±1 ppb	-40 to 85 °C	Tight stability	✓
IQOV-90	25.4 x 22 mm	3.3, 5.0, 12 V	HCMOS, Sine	10 to 40 MHz	-155 dBc/Hz typ	±3 ppb	-40 to 75 °C	MTIE/TDEV	✓
IQOV-210F	25.4 x 25.4 mm	3.3, 5.0, 12 V	Sine	100 MHz	-180 dBc/Hz typ	±10 ppb	-40 to 85 °C	Ultra low phase noise	
IQOV-60	25.4 x 25.4 mm	3.3, 5.0 V	HCMOS, Sine	4 to 20 MHz	-150 dBc/Hz typ	±3 ppb	-40 to 75 °C	Low ageing ±0.5 ppb/day	
IQOV-164	36 x 27 mm	3.3 V	HCMOS, Sine	5 to 100 MHz	-155 dBc/Hz typ	±0.2 ppb	-40 to 85 °C	Ultra tight stability	
IQOV-200F	36 x 27 mm	12 V	Sine	80 to 130 MHz	-180 dBc/Hz typ	±50 ppb	-20 to 70 °C	Ultra low phase noise	
IQOV-220	36 x 27 mm	12 V	Sine	10 MHz	-160 dBc/Hz typ	±0.5 ppb	-40 to 85 °C	Short term stability 0.5 ppt	

Disciplined Oven Controlled Crystal Oscillators

Model	Package	Supply Voltage	Holdover Stability (Tightest)	Key Feature
IQCM-140	20.2 x 20.2 mm	3.3 V	<20 µs / 24Hrs	1 PPS & 10 MHz Output, Short term stability ±0.1 ppb min
IQCM-160	25 x 30 mm	3.3 V	<1.5 µs / 8Hrs	1 PPS & 10 MHz Output, Short term stability ±0.01 ppb min
IQCM-200	51 x 51 mm	5.0 V	<1.5 µs / 24Hrs	1 PPS & 10 MHz Output, Short term stability ±0.02 ppb min
IQCM-112	60 x 60 mm	5.0 V	<1.5 µs / 24Hrs	1 PPS & 10 MHz Output, Internal GNSS receiver
IQCM-100	65 x 65 mm	5.0 V	<1 µs / 24Hrs	1 PPS & 10 MHz Output, Short term stability ±0.02 ppb min

IQCM-EVboard

Evaluation board for the IQCM-100, IQCM-112, IQCM-140, IQCM-160 and IQCM-200

Rubidium Oscillators

Model	Package	Supply Voltage	Output Compatibility	Frequency	Short Term Stability @ 100s	Operating Temp. Range (Widest)	Key Feature
ICPT-1	45 x 36 mm	3.3 V	CMOS	10 MHz	±0.009 ppb	-45 to 70 °C	Small package, 1 PPS Input/Output
IQRB-4	50.8 x 50.8 mm	5.0 V	CMOS	10 MHz	±0.004 ppb	-10 to 60 °C	Frequency stability ±0.08 ppb
IQRB-1	50.8 x 50.8 mm	12 V	Sine	10 MHz	±0.008 ppb	-30 to 65 °C	Frequency stability ±0.05 ppb
IQRB-2	101 x 61 mm	12 V	Sine	10 MHz	±0.0075 ppb	-20 to 60 °C	-158 dBc/Hz @10 kHz
IQRB-3	101 x 61 mm	12 V	Sine	10 MHz	±0.002 ppb	-20 to 60 °C	-158 dBc/Hz @10 kHz, 1 PPS Input/Output

FREE Handbook

We have conducted extensive testing on various Rubidium models and comprehensive handbooks. Tests include, among others, short term stability, power consumption, retrace and frequency over temperature measurements. Contact us for your free copy: info@IQDfrequencyproducts.com

Programming Manual (ICPT-1)

The ICPT-1 offers multiple programming options. The manual details information needed to digitally adjust the frequency, to use the one second time of day (TOD) counter, as well as the 1 PPS lock and holdover mode.

Automotive Crystals & Oscillators

Quartz Crystals to AEC-Q200 (SMD)

Model	Package	Frequency Range	Frequency Tolerance (Tightest)	Frequency Stability (Tightest)	Operating Temp. Range (Widest)	Key Feature	SMD
IQXC-42 AUTO	2.0 x 1.6 mm	20 to 50 MHz	±10 ppm	±20 ppm	-40 to 125 °C	Miniature package	✓
CFPX-218 AUTO	2.5 x 2.0 mm	12 to 50 MHz	±10 ppm	±20 ppm	-40 to 125 °C	Miniature package	✓
IQXC-180 AUTO	3.2 x 2.5 mm	11 to 150 MHz	±10 ppm	±15 ppm	-40 to 125 °C	High Frequency	✓
IQXC-104 AUTO	5.0 x 3.2 mm	8 to 125 MHz	±10 ppm	±50 ppm	-40 to 125 °C	High Frequency	✓
12SMX AUTO	7.0 x 5.0 mm	6 to 125 MHz	±10 ppm	±50 ppm	-40 to 125 °C	Industry standard	✓
HC49/4H AUTO	11.05 x 4.7 mm	3.01 to 100 MHz	±50 ppm	±50 ppm	-40 to 125 °C	Industry standard	
HC49/4HSMX AUTO	11.3 x 4.7 mm	3.01 to 100 MHz	±10 ppm	±15 ppm	-40 to 125 °C	Industry standard	✓

Clock Oscillators to AEC-Q200 (SMD)

Model	Package	Supply Voltage	Output Compatibility	Frequency Range	Frequency Stability (Tightest)	Operating Temp. Range (Widest)	Key Feature
IQXO-540 / 541 / 542 AUTO	2.0 x 1.6 mm	1.8, 2.5, 3.3 V	CMOS	4 to 50 MHz	±25 ppm	-40 to 125 °C	Miniature package
CFPS-53 / 54 / 56 AUTO	2.5 x 2.0 mm	1.8, 2.5, 3.3 V	CMOS	2 to 50 MHz	±25 ppm	-40 to 125 °C	Miniature package
CFPS-39 / 40 / 41 AUTO	3.2 x 2.5 mm	1.8, 2.5, 3.3 V	CMOS	2 to 50 MHz	±25 ppm	-40 to 125 °C	Industry standard
IQXO-581 / 582 / 583 AUTO	5.0 x 3.2 mm	1.8, 2.5, 3.3 V	CMOS	1 to 50 MHz	±25 ppm	-40 to 85 °C	Industry standard
CFPS-31 / 32 AUTO	7.0 x 5.0 mm	1.8, 2.5 V	CMOS	1 to 40 MHz	±25 ppm	-40 to 125 °C	Industry standard

Automotive grade components available manufactured in accordance with IATF 16949:2016 and AEC-Q200

Technical Support Services

We have a dedicated engineering and application test facility in the UK exclusively for customer support, including:

- Crystal parameters including FR, FL, C0, C1, Trim, R1
- Oscillator parameters including F, current draw, output characteristics
- Frequency behaviours over temperature (stability)
- Phase noise and phase jitter
- Short term stability
- Accelerated ageing
- Circuit characterisation
- MTIE/TDEV testing

Additional (Technical) Services

- Application Support
- Electrical Testing & Screening
- Crystal measurement within final board
- Autodesk Eagle/Fusion 360 Software Footprint Library
- CAD files for all products in .STEP, .IGES and 3D pdf
- Custom product design
- Sample development

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