High-Reliability Products for Defense: India Heritage

Introduction

Rakon is one of the world's largest solution providers of high reliability frequency control products. Through Rakon India (formally Centum Rakon India), Rakon offers a wide variety of high reliability solutions into the Indian defense market. Rakon continuously develops state of the art frequency control products at the edge of innovative technology, supporting the "Make in India" initiative directed by the Indian government.

Rakon India Defense Product Range, Heritage and Capabilities

- Rakon India has a proven record of supplying XOs, VCXOs, TCXOs and OCXOs into the Indian market for more than 15 years, and has helped to build India's domestic heritage in defense programmes.
- A majority of our defense products are qualified and being deployed with major customers, whether they are Tier 1-2, private or government-based.
- As your strategic frequency control partner, Rakon can provide standard products or modified solutions, ranging from high performance crystals and ovenised oscillators through to complex sub-systems.

Rakon is Qualified in Many Indian Programmes

Many government and commercial programmes in India use Rakon products in systems where high performance is required under the most complex and demanding conditions (airborne, sea and land). Specific applications include: Stable Local Oscillators (STALOs), ground/air radar Tx/Rx modules, Coherent Oscillators (CO), master oscillators for radar Rx, Master Reference Oscillators (MRO), Identification of Friend or Foe (IFF) radars, military switching equipment, avionics (commercial and military), Air Route Surveillance Radar (ARSR), airborne Software-Defined Radio (SDR) and synthesizer references.

High-Reliability Products for Defense: Rakon India

Defense Solutions

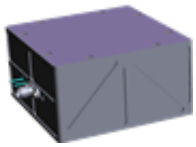
Rakon India has an extensive portfolio of products with extreme capabilities. We have frequency control solutions for the demanding requirements of all types of high reliability applications.

Vibration Resilient Solutions

CEMILAC-Certified OCXO

- 60, 100 or 120 MHz
- Fvs.T ± 50ppb (-40 to 85°C)
- Random Vibration 0.04 g^2/Hz : 20–1000 Hz
- Duration: 5 min each axis over 3 axes: -6 dB/Octave (1–2 kHz)
- 78.9 x 78.9 x 27 mm
- **Radar, Airborne**

Vibration Hardened OCXO



- 100 to 120 MHz
- Fvs.T ± 50 ppb (-40 to 85°C)
- G-sensitivity 0.2 ppb/g
- Random Vibration
- 0.04 g^2/Hz: 20–1000 Hz
- Duration: 5 min each axis over 3 axes: -6 dB/Octave (1–2 kHz)
- Dimension: 63 x 63 x 37 mm
- **Radar, Airborne**

High Temperature Solutions

High Temperature Class-2 Grade TCXO

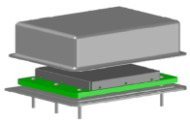
- 67.3 to 455 MHz
- Fvs.T ± 3 ppm (-15 to 75°C)
- Fvs.T ± 10 ppm (-40 to 85°C)
- Fvs.T ± 50 ppm (-55 to 125°C)
- Hermetic package
- 25 x 21 x 10 mm
- **Ground radar**

High Temperature Class-2 Grade XO

- 67 to 356 MHz
- Fvs.T ± 25 ppm (-20 to 70°C)
- Fvs.T ± 50 ppm (-55 to 105°C)
- Ageing < ± 2 ppm/year
- Hermetic package
- 25 x 21 x 10 mm
- **Ground radar**

High Stability Solutions

Digital Selectable, Dual Frequency, Gated Oscillator



- Dual output: 1030 and 1090 MHz
- Fvs.T ± 0.5ppm (-40 to 85°C)
- Spurious < -60 dBc
- Fast switching time
- Package RF radiation -60 dBm
- 36 x 27 x 11 mm
- **IFF radars, Transponder Rx, Military switching equipment**

High Power, Gated Oscillator

- Up to 1.15 GHz
- RF power 1 W in Pulsed Mode
- Output Power ± 1 dBm
- Package RF radiation -50 dBm
- Multiple package sizes
- **IFF radars, Transponder Rx, Ground radar Tx/Rx**

Voltage Tuneable Oscillator

- 1.4 to 1.6 GHz
- Frequency step size 25 kHz
- Fast switching time
- Spurious < -75 dBc
- 76.5 x 70 x 44.5 mm
- **Master oscillator for radar Rx, Stable Local Oscillator (STALO), Radar receiver module**

Compact Solutions

Miniature Chassis Mount OCXO

- 10 MHz
- Fvs.T ± 1 ppb (-55 to 85°C)
- Spurious < -70 dBc
- Power level +13 dBm
- 38 x 38 x 51 mm
- **Avionics, Air Route Surveillance Radar (ARSR)**

LNO Low Noise OCXO

- 100 MHz
- Phase Noise -165 dBc/Hz @10 kHz
- Fvs.T ± 10 ppb (-40 to 85°C)
- Spurious < -60 dBc
- 25 x 25 x 12.7 mm
- **Airborne SDR, Synthesizer reference, Communications**

High Frequency TCXO

- 200 MHz to 3.3 GHz
- PLL-based
- Low Phase Noise
- Fvs.T ± 0.5ppm (-40 to 85°C)
- 20 x 20 x 7 mm
- **VHF SDR, Manpack radio, X-band frequency conversion**