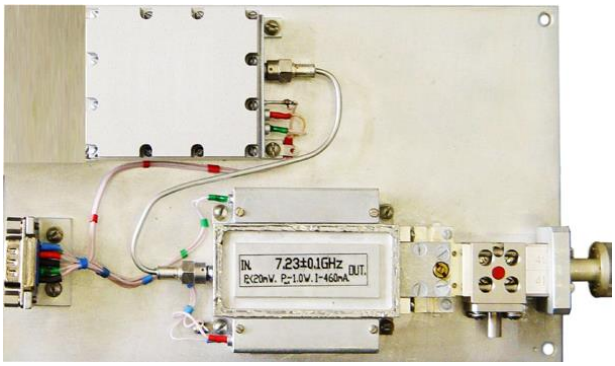
- **High power output levels**
- **Ultra Low phase and AM noise**




## Applications

- Power sources
- Spectroscopy/Radiometry
- Digital Radio

## Description

Complete High performance fixed IMPATT oscillators are very stable solid state millimeter wave source with ultra low phase AM noise. Oscillator consists of transistor oscillator stabilized by the dielectric resonator (DRO) 6-8 GHz, 50 mW output, $10^{-6}$ frequency stability. The stability would be increased upon request using a temperature stabilization scheme.

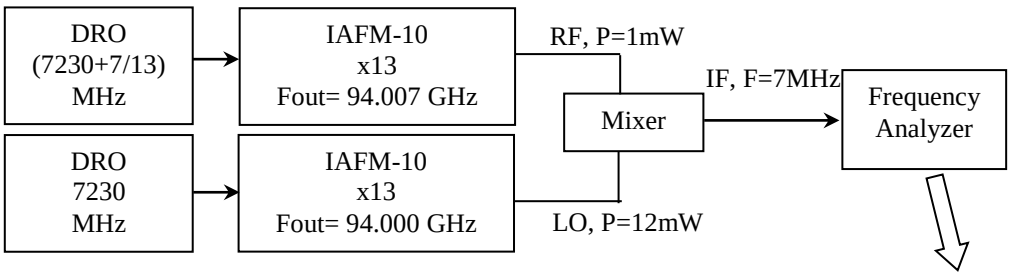
## Specifications

| **Model Number** | ISMA -28 | ISMA -22 | ISMA -19 | ISMA -15 | ISMA -12 | ISMA -10 | ISMA -08 | ISMA -06 |
|---|---|---|---|---|---|---|---|---|
| **Frequency Band**<br>**Frequency Range, GHz** | Ka<br>26.5-40 | Q<br>33-50 | U<br>40-60 | V<br>50-75 | E<br>60-90 | W<br>75-110 | F<br>90-140 | D<br>110-180 |
| **Maximum Power Output**** | 150 | 150 | 120 | 100 | 50 | 30-50 | 15-30 | 10-20 |
| **Input signal power, mW** | 30-50 | 30-50 | 30-50 | 30-50 | 30-50 | 30-50 | 30-50 | 30-50 |
| **Multiplication factor** | 5-8 | 6-10 | 7-10 | 8-13 | 10-15 | 14-18 | 18-24 | 19-25 |
| **DC Power, V/A** | +12/0.6<br>-12/0.01<br>+50/0.15 | +12/0.6<br>-12/0.01<br>+45/0.15 | +12/0.6<br>-12/0.01<br>+45/0.15 | +12/0.2<br>-12/0.01<br>+35/0.15 | +12/0.6<br>-12/0.01<br>+35/0.2 | +12/0.6<br>-12/0.01<br>+27/0.2 | +12/0.6<br>-12/0.01<br>+24/0.2 | +12/0.6<br>-12/0.01<br>+24/0.26 |

** Values are presented for the middle frequency of the frequency band.

Typical performance for W-band solution.

Scheme of measurement.




See on picture, at 10 kHz offset, the difference in power between carrier and 10kHz offset marker is –69.6dBc. Taking into account that bandwidth is 1kHz , the spectrum density of noise is –99.6dBc/Hz. Assuming that we have two equivalent sources the noise power of each source is 3 dB less, i.e. –102.6 dBc/Hz