



FREE RUNNING SIGNAL SOURCES

SERIES C

Features

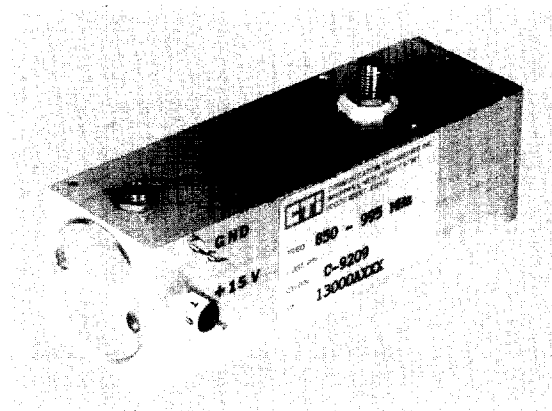
- $\pm 0.05\%$ Frequency stability
- Wideband Mechanical Tuning
- High Reliability
- Field Tunable

Options

- Narrowband FM Modulation for Phase-Locked Applications
- AFC Tuning
- Auxiliary RF Output
- Auxiliary L-Band Output

Description

Series C fundamental, cavity oscillators and oscillator-multiplier combinations have been designed specifically for applications which include telecommunications, radar, telemetry and instrumentation. They utilize a high-Q, mechanically tuned cavity to produce a reliable microwave source that is easy to tune in the field. Furthermore, the series exhibits excellent long-term stability, has outstanding spectral purity and impressive AM and phase-noise characteristics.



These sources can be designed to satisfy customer's specifications and also have the option to incorporate modulation assemblies for phase-locking and narrow-band FM applications. *See page 98 for a list of typical frequency and power ranges available.

Typical Phase Noise

FREQUENCY OFFSET FROM CARRIER-Hz	PHASE NOISE -dBc/Hz 1 GHz	PHASE NOISE -dBc/Hz 3 GHz	PHASE NOISE -dBc/Hz 7 GHz	PHASE NOISE -dBc/Hz 23 GHz
100	-50	-40	-33	-22
1k	-80	-70	-62	-52
10k	-110	-100	-92	-81
100k	-134	-123	-116	-106
1M	-156	-147	-138	-127
10M	-170	-160	-153	-143

Tuning Characteristics (Typical)

TUNING VOLTAGE	FREQUENCY TUNING RANGE
5	-1.5%
10	+0.02%
15	+0.13%



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High- Q mechanically tunable cavity oscillators low phase-noise 0.5 GHz to 23 GHz (in bands)

Typical Specifications

Frequency Range	
Fundamental	0.5 to 2.5 GHz
Oscillator-Multiplier	2.2 to 23 GHz
Frequency Stability	±0.05% standard
Power Output	5 mw to 500 mw
Power Variation (Maximum)	-30°C to +65°C: +1.0 db, -1.5 dB relative to + 25°C.
Over tuning range	±1.5 dB
Spurious Signals	
In-Band	≤100dBc below output
Out-of-Band	≤30dBc (Series CM) below output
FM Residual Noise	Demodulated noise suitable for telecommunication relay and radar (see curves).
VSWR	1.5:1
AFC Range	±0.1% (4 to 16 Vdc) (optional)
FM Modulation	DC-12 MHz (option)
Load Impedance	50 Ohms (auxiliary output available as an option)
Input Power	15 or 20 V at 100 to 500 mA. ±1.5% reg. Polarity optional.
Temperature	
Operating	-30°C to +65°C
Storage	-54°C to 90°C
Connectors	
RF Output	SMA; MOD/AFC: BNC or SMA

How to Order

Series C

Because of CTI's unique capability to custom configure units to a wide variety of requirements, a special model number will be assigned to each new order.

When ordering, the following minimum information should be stated:

1. Frequency Range
2. Power Output (min.)
3. Supply Voltage & Polarity
4. AFC and/or Modulation if Required Optional
5. Phase-Noise Requirement
6. Spurious-Critical in-band or out-of-band spurious
7. Other Special Features Required



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Outline Drawing

