



## 2099-10, 10MHz Reference

The 2099-10, 10 MHz Reference provides two 10 MHz outputs from a  $\pm 0.01$  ppm high stability oven controlled crystal oscillator. Front panel LEDs provide indication of DC power and oven warm-up. The level is +9 dBm and the 2099-10 works into either a 75 or 50 ohm load. Connectors are BNC female. A relay contact closure or open indicates when the oscillator oven is stabilized. The unit is powered by a 100-240  $\pm 10\%$  VAC power supply; and housed in a 1 3/4" X 19" X 14" rack mount chassis.

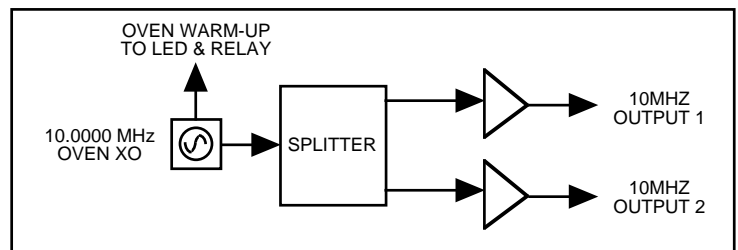


**Front Panel**

### EQUIPMENT SPECIFICATIONS\*

#### Output Characteristics

Number of outputs	2
Impedance	50 $\Omega$ or 75 $\Omega$
Return Loss	>18 dB
Frequency	10.0000 MHz
Output Level	+7 $\pm$ 1 dBm
Harmonics	< -30 dBC, < -40 typ.
Spurious	< -75 dBC



**Block Diagram**

#### Oscillator Stability

Over temperature	$\pm 0.01$ ppm max. 0°C to +50°C
Aging, per day	$\pm 0.001$ ppm
Aging, per year	$\pm 0.1$ ppm
Warm up, in 4 minutes	$\pm 0.1$ ppm
Warm up, in 1 hour	$\pm 0.01$ ppm
Mechanical adjustment	$\pm 1$ ppm

#### Oscillator Phase Noise

Phase Noise @ Freq	10Hz	100Hz	1kHz	10 kHz
dBC/Hz	-110	-140	-155	-160

#### Controls, Indicators

Power	Green LED
Oven Warm Up	Yellow LED, External Contact Closure (No Contact Closure with -Option W45).
Alarm	Red LED, External Contact Closure (-Option W45).

#### Other

10 MHz Connectors	BNC (female) 50 $\Omega$ or 75 $\Omega$ - Customer to specify at time of order.
Connector, Alarm	DB9 - NO or NC contact closure on Alarm.
Size	19 inch standard chassis 1.75" high X 14.0" deep.
Power	100-240 $\pm 10\%$ VAC, 47 - 63 Hz, 20 watts max.

#### Options

D	50 $\Omega$ Output
W45	Provides Level Alarm indicator and external contact closure.

\*10°C to 40°C; Specifications subject to change without notice.