

The 908 & 909 – Stable Frequency References

Models 908 and 909 Frequency Standards are designed for use as accurate reference clocks in automated test-systems and as in-house frequency standards. Because they require only a short warm-up time to reach specified stability, they can also be used as portable frequency standards.

The Model 909 includes an ultra-stable Rubidium timebase (“atomic clock”), while the Model 908 is built around a high-stability oven-controlled SC-cut crystal oscillator. Both instruments provide five buffered 10 MHz outputs plus one 5 MHz output. Option 70 increases the number of 10 MHz outputs to ten.

Ideal for automated test (ATE) systems

Many production test systems, particularly in the telecommunications industry, require a stable external frequency clock as a reference. Depending on your needs either the Model 908 or the 909 can supply a stable frequency reference to up to 11 other instruments and testers, making them ideal for use in an ATE system. In addition there is a rack mounting kit available.

Model 909

The Rubidium version, with its negligible aging drift needs in prac-

tice no adjustment during the life time of the test system.

Model 908

With its high-stability oven-controlled SC-cut crystal oscillator offers the lowest purchase cost per output on the market in the 11 output version (option 70 installed).

In-house frequency standards

Models 908 and 909 are ideal for use in calibration laboratories where there is a need to calibrate a wide range of instruments, such as frequency counters and synthesizers. Unlike off-air frequency receivers,



for test systems and calibration laboratories

Models 908 and 909 have very-high short-term stability that enables much faster frequency calibration.

Companies that require frequency standards in numerous departments spread over several buildings will find that a local Rubidium standard (Model 909) normally offers a more cost effective solution than a central reference with a costly distribution system.

Made for portability

Models 908 and 909 are designed for portability. They perform exceptionally well as transportable fast-warm-up frequency references.

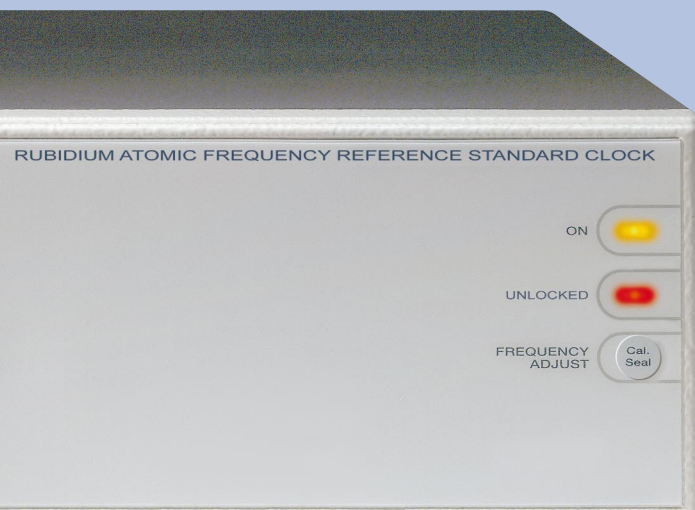
Traditionally, oven oscillators using AT-cut crystal could not maintain their specification without continuous battery back-up during transportation to different sites. This is because AT-cut crystals suffer from significant frequency retrace (frequency offset after a power interruption). They also need a very long warm-up time, 24 hours or more, to arrive at the final frequency value.

Model 908's oven oscillator is designed around the more advanced SC-cut crystal oscillator which has virtually no retrace. In just 10 minutes the frequency is within 5×10^{-9} of the final value,

meaning it can be in service faster. Finally, there is no need for battery back-up during transportation. The warm-up of the Model 909 Rubidium oscillator is even faster, taking only 10 minutes to reach as close as 4×10^{-10} from the final frequency.

For protection during transport and storage, there is a carrying case available.

Models 908 and 909 provide stable, cost effective solutions for your frequency reference requirements whether in ATE, laboratory or portable applications.



2460506750
 2301040869605405071
 2402101240579745070

908 / 909 Series Technical Specifications



Reference outputs

Base model: 5x 10MHz, 1x 5 MHz: sine >0.6V rms in 50 Ω
 With Option 70: 10x 10MHz, 1x 5 MHz: sine >0.6V rms in 50 Ω

Frequency Stability

Stability	908 (Oven)	909 (Rubidium)
Aging per month	3x10 ⁻⁹	5x10 ⁻¹¹
Aging per year (per 10 years)	2x10 ⁻⁸ (1 year)	1x10 ⁻⁹ (10 years)
Temperature (20°C to 26°C)	4x10 ⁻¹⁰ typ.	2x10 ⁻¹¹ typ.
(0°C to +50°C)	2.5x10 ⁻⁹	3x10 ⁻¹⁰
Short term (root Allan variance)	5x10 ⁻¹² τ=10s 5x10 ⁻¹² τ=1s	1x10 ⁻¹¹ τ=10s 3x10 ⁻¹¹ τ=1s
Warm up (at +25°C)	10 mins. to 5x10 ⁻⁹	5.4 mins. to lock 11 mins. to 4x10 ⁻¹⁰

Environment

Temperature: 0°C to +50°C (operating)
 -40°C to +70°C (storage)
 Safety: Compliant to EN 61010-1 and **CE**
 EMI: Compliant to EN 55011 ISM group, class B, EN 50082-2 and **CE**

Power Consumption (90-264 V, 47-63 Hz)

908: <20W at warm up, < 7W continuous operation
 909: <70W at warm up, <30W continuous operation

Dimensions and Weight

W x H x D: 315 x 86 x 395mm
 Weight: 4.8kg (net), 7.8 kg (shipping)

Ordering information

908: Crystal oven; 5 x 10 MHz and 1 x 5 MHz outputs
 908 + Opt. 70: Crystal oven; 10 x 10 MHz and 1 x 5 MHz outputs
 909: Rubidium; 5 x 10 MHz and 1 x 5 MHz outputs
 909 + Opt. 70: Rubidium; 10 x 10 MHz and 1 x 5 MHz outputs

Included Accessories

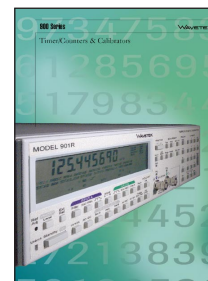
Operators manual and Calibration Certificate

Optional Accessories

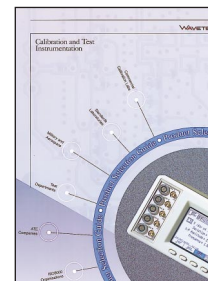
Option 50: 19" rack mounting kit

For more information:-

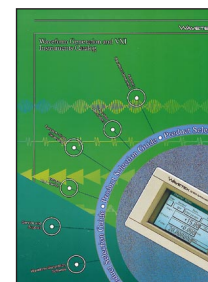
For information on the products outlined in this catalogue or the other Wavetek catalogues illustrated below contact your nearest Wavetek Sales Office or go on-line to our Internet Website www.wavetek.com



900 Series Timer/Counters and Calibrators



Calibration and Test Instrumentation



Waveform Generation and VXI Instruments

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Specifications subject to change without notice

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