

6688 and 6689

High stability frequency standards

Ideal reference for multiple testers

- Rubidium or high stability oven frequency reference standard
- Distribution amplifiers for 5x10 MHz and 1x5 MHz outputs as standard
- Optional 10x10 MHz outputs
- 0.001 ppm aging in 10 years (Rubidium)
- Ideal for telecommunication test systems and calibration laboratories



The Pendulum Frequency References; model 6689 with a Rubidium clock and model 6688 with a high-stability oven-controlled crystal oscillator, are designed for use in test systems, where a very high stability frequency reference is required and where multiple instruments or testers need to be supplied.

The Frequency References are also suited in calibration laboratories for calibrating various instrumentation, like frequency counters and synthesizers.

The 6689 Rubidium Reference can be used as a primary lab reference, ensuring a frequency drift due to aging of less than 0.001 ppm during 10 years.

Specifications

Reference outputs

Standard model: 5x10 MHz, 1x5 MHz; sine >0.6V rms in 50 Ω
Incl. option 70: 10x10 MHz, 1x5 MHz; sine >0.6V rms in 50 Ω

Frequency stability

Stability	6688 (oven)	6689 (Rubidium)
Aging/month	3×10^{-9}	5×10^{-11}
Aging / year; aging / 10 years:	2×10^{-8} (1 year)	1×10^{-9} (10 years)
Temperature (0...+50°C)	2.5×10^{-9}	3×10^{-10}
Short term (Root Allan variance)	$5 \times 10^{-12} \tau = 10s$	$1 \times 10^{-11} \tau = 10s$
	$5 \times 10^{-12} \tau = 1s$	$3 \times 10^{-11} \tau = 1s$
Warm up (at +25°C):	10 min. to 5×10^{-9}	5.4 min. to lock
		11 min. to 4×10^{-10}

Environmental

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

Power consumption (90...264 V, 47-63 Hz)

6688: <20W at warm-up, <7 W continuous operation
6689: <70W at warm-up, <30W continuous operation

Mechanical Data

WxHxD: 315x86x395 mm; 4.8 kg (net), 7.8 kg (shipping)

Built-in options

Option 70: 5 extra 10 MHz outputs

Ordering information

6688/011: Crystal oven standard model;
 5x10 MHz and 1x5 MHz outputs
6688/021: Crystal oven incl. option 70;
 10x10 MHz and 1x5 MHz outputs
6689/011: Rubidium standard model;
 5x10 MHz and 1x5 MHz outputs
6689/021: Rubidium incl. option 70;
 10x10 MHz and 1x5 MHz outputs

Included with Instrument

Operators manual, Calibration certificate

Optional accessories

Option 22: 19" rack mount kit
 Option 27: Carrying case

Specifications subject to change without notice

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Pendulum Instruments AB
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