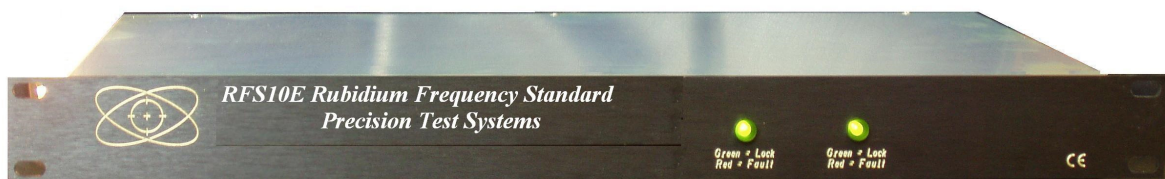




# RFS10H: Economy, 10 MHz Rubidium Frequency Standard



## Key Features

- Rubidium Oscillator as main frequency reference
- Five sinewave outputs as standard.
- Switchable squarewave output.
- Many options available. See list in this brochure
- Custom built options available upon request
- 19" 1U high rack mountable case

## Description

The RFS10H is an economy 10 MHz rubidium frequency standard with many options as described below. It has five sinewave outputs as standard plus a switchable squarewave output. This squarewave output can be set to 10MHz, 5 MHz, 2 MHz, 1 MHz, 100 kHz or 1 pps.

## Options

Various options are available such as:

- Frequency Change to 5 MHz
- External DC input allowing operation from 12V, 18V or 24V external DC. Automatically switched in, if the AC supply is lost.
- DDS output programmable from 0 to 80 MHz in 1  $\mu$ Hz steps. Sinewave and squarewave outputs.
- Output levels to +19 dBm.
- Extra sinewave or squarewave outputs.

## Specifications

Description	Specification	Remarks
<b>Rubidium Oscillator</b>		
Output Frequency	10 MHz sinewave	Optional change to 5 MHz
Aging (after 30 days)	$< 5 \times 10^{-11}$ /month or $< 2 \times 10^{-9}$ / 1 <sup>st</sup> year	Also $< 2 \times 10^{-11}$ / day
Accuracy at shipment	$< \pm 5 \times 10^{-11}$ @ 25 °C	
Allan Deviation	$< 3 \times 10^{-11}$ (1s), $< 1.0 \times 10^{-11}$ (10s),	Also $< 3 \times 10^{-12}$ / 100 seconds
Spurious	$< -60$ dBc	
Frequency Retrace	$\pm 1 \times 10^{-10}$ (24 hours off, 1 hour on)	
Digital Frequency Adjustment	$\pm 2.5 \times 10^{-9}$ Resolution $< 1 \times 10^{-11}$	Through RS232 port
Trim Range	$\pm 4 \times 10^{-9}$ (rear panel),)	
Warm-Up Time	$< 15$ minutes to within $5 \times 10^{-10}$	Optional $< 4$ minutes
Temperature Coefficient	$3 \times 10^{-10}$ (-5 °C to +60 °C)	
Magnetic Field	$< 4 \times 10^{-11}$ all directions	
Design Life	20 years	
<b>10 MHz Outputs</b>		
Number of Outputs	Five as standard	Rear panel BNC connectors.
Frequency	10 MHz	
Accuracy	Same as main Rubidium Reference	
Signal Type	Sine wave	
Amplitude	0 dBm to + 15 dBm adjustable	Internally adjustable
Harmonic Distortion	- 65 dBc	Typically -70 dBc
Return Loss	$> 15$ dB @ 10 MHz	
Phase Noise (dBc/Hz) @ offset frequency @ 10 MHz carrier frequency.	-70 dB @ 1 Hz, -80 @ 10Hz, -115 @ 100 Hz, -135 @ 1 kHz, -140 @ 10 kHz	
<b>Squarewave Output</b>		
Connector	BNC Connector – rear panel	
Frequency	10, 5, 2, 1 MHz, 100 kHz, 1pps	Switchable by front panel
Signal Type	Squarewave	
Amplitude (50Ω / open circuit)	0 to 2.7 / 5 V, TTL Compatible	
<b>Miscellaneous</b>		
Serial Interface	RS232	
Operating / Storage Temperature	-5 °C to +55 °C / -20 °C to +90°C	Rear Panel
AC Power Inlet with switch	IEC320 power cord	Usable 90 - 260 VAC
AC Voltage Range	100 - 240 VAC	
Power consumption	$< 25$ Max (warm up), $< 20$ W (operating)	
Width x Depth x height. / Weight	482.6 x 330 x 44 mm / 3 kg's	

Consult Precision Test Systems for further details of these options. Not all options can be fitted at the same time.

Head Office (UK)	South Africa	USA
Precision Test Systems LTD The Studio, Whitehouse Farm, New Hall Lane, Mundon Maldon, Essex, CM9 6PJ, UK Tel: +44 (0) 870 368 9608 Fax: +44 (0) 1245 330030 Email: uksales@ptsyst.com Web: www.ptsyst.com	Precision Test Systems cc Randburg Gauteng South Africa Fax 08651 58198 Email: sasales@ptsyst.com Web: www.ptsyst.com	Precision Test Systems 1321 Upland Drive Suite # 981 Houston, TX 77043 Tel: 1 888 876 4804 Fax: 1 832 201 6564 Email: usasales@ptsyst.com Web: www.ptsyst.com

Specifications subject to change without notice (080515)