



Time Electronics
Calibration, Test and Measurement

User Manual

9762 Rubidium Frequency Standard

Version 1.1
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Nothing from this manual may be multiplied, or made public in any form or manner, either electronically or hard copy, without prior written consent from Time Electronics Ltd.

This also applies to any schematics, drawings and diagrams contained herein.

This manual provides operating and safety instructions for the Time Electronics product.

To ensure correct operation and safety, please follow the instructions in this manual.

Time Electronics reserves the right to change the contents, specifications and other information contained in this manual without notice.

Contents

1	Introduction.....	4
2	Operation.....	5
3	Specifications	7
4	Warranty and Servicing.....	8

1 Introduction



The 9762 is a high accuracy rubidium atomic frequency reference. It is designed to enhance the output frequency of the 5045 oscilloscope calibrator up to 10 MHz.

It can also be used with the 5025 and 5051 multifunction calibrators when the oscilloscope calibration option (9770) is fitted.

It is designed for long operating periods of up to 10 years without maintenance. The unit provides a highly stable frequency with good short and long term stability. It is ideal for referencing frequency outputs on the 5045, 5025, and 5051 calibrators.

Features

- High accuracy frequency reference
- For use with the 5045 scope calibrator
- Compatible with 5025/5051 (with scope option)
- 10 MHz sine-wave
- Accuracy 1×10^{-10}
- Good short and long-term stability
- Compact design (190 x 120 x 90 mm)
- Built for long operating periods (10 yrs)

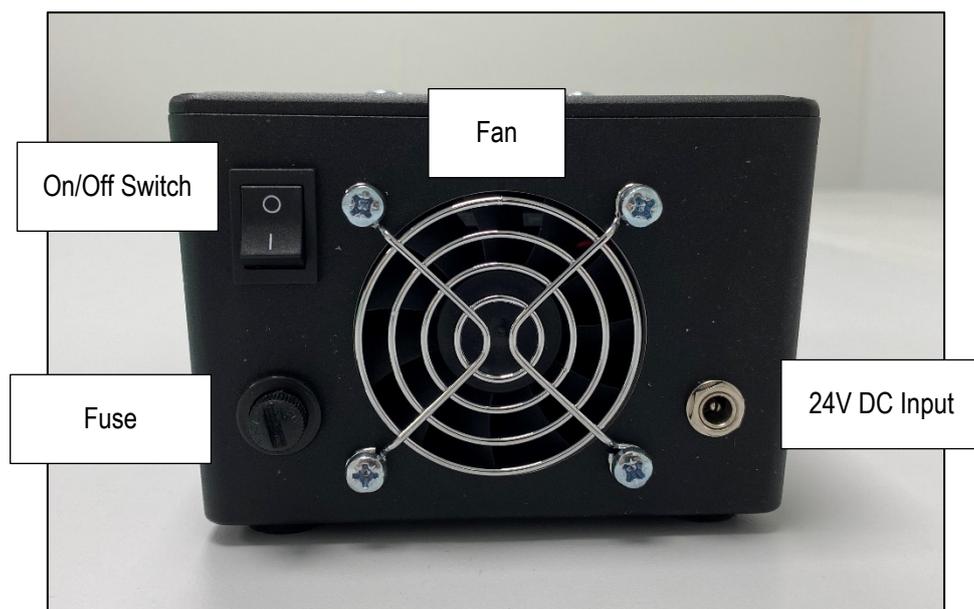
2 Operation

The 9762 is a highly accurate and stable 10MHz reference which can be used to enhance the 5045 output frequency up to 10MHz.

The unit is powered by an external AC/DC power supply, with an input range of 100 to 240V.



On the rear of the 9762 there is an on/off switch, 350mA fuse, external 24V DC power supply connection, and fan. Do not obstruct the fan.



The main 10MHz output is located on the front of the unit.
Green LED indicates power. Red LED indicates Lock.



The 9762 is connected to the 5045 via the rear panel 10 MHz reference input.

The AUX indicator LED will illuminate once the reference is connected. Without the reference connected the 5045 uses its standard internal oven controlled oscillator.



3 Specifications

Technical Specifications

Frequency	10 MHz sine-wave into 50 Ω .
Output level.....	0.5 V rms \pm 10 % (approx 1.41 Vpp or 7 dBm).
Aging 1 month	1×10^{-10} .
Aging 1 year	5×10^{-10} .
Short term stability (Allan variance)	$< 2 \times 10^{-11}$ (1 s). $< 1 \times 10^{-11}$ (10 s). $< 2 \times 10^{-12}$ (100 s).

General Specifications

Warm up time.....	Less than 6 minutes to lock (starting at 25 $^{\circ}$ C). Less than 7 minutes to 5×10^{-9} (starting at 25 $^{\circ}$ C).
Operating temperature	0 to 50 $^{\circ}$ C.
Connection.....	BNC.
Indicators	Power and Lock.
Power supply	110 V to 250 V (external).
Dimensions	190 x 120 x 90 mm.
Weight.....	0.6 kg.

4 Warranty and Servicing

Warranty

Time Electronics products carry a one-year manufacturer's warranty as standard.

Time Electronics products are designed and manufactured to the highest standards and specifications to assure the quality and performance required by all sectors of industry. Time Electronics products are fully guaranteed against faulty materials and workmanship.

Should this product be found to be defective, please contact us using the below details. Inform us of the product type, serial number, and details of any fault and/or the service required. Please retain the supplier invoice as proof of purchase.

This warranty does not apply to defects resulting from action of the user such as misuse, operation outside of specification, improper maintenance or repair, or unauthorized modification. Time Electronics' total liability is limited to repair or replacement of the product. Note that if Time Electronics determine that the fault on a returned product has been caused by the user, we will contact the customer before proceeding with any repair.

Product Registration

You can register your product at: www.timeelectronics.com/contact/product-registration
Registering your product will enable us to maintain a record of purchase for your warranty. You can also use the web form to provide feedback about our products and services.

Calibration and Repair Services

Time Electronics offers repair and calibration services for all the products we make and sell. Routine maintenance by the manufacturer ensures optimal performance and condition of the product. Periodic traceable or accredited calibration is available.

Contacting Time Electronics

Online:

Please visit www.timeelectronics.com and select Technical Support from the Contact links. From this page you will be able to send information to the Time Electronics service team who will help and support you.

By phone:

+44 (0) 1732 355993

By email:

mail@timeelectronics.co.uk

Returning Instruments

Prior to returning your product please contact Time Electronics. We will issue a return merchandise authorization (RMA) number that is to accompany the goods returning. Further instructions will also be issued prior to shipment. When returning instruments, please ensure that they have been adequately packed, preferably in the original packing supplied. **Time Electronics Ltd will not accept responsibility for units returned damaged.** Please ensure that all units have details of the service required and all relevant paperwork.

Send the instrument, shipping charges paid to:

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Disposal of your old equipment



1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or return to Time Electronics.