

CALIBRATION SOFTWARE USER MANUAL

MODEL 3165

PUBLICATION NO. 980899-004

RACAL INSTRUMENTS

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PUBLICATION DATE: August 24, 2004

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For this product, or any other Racal Instruments product that incorporates software drivers, you may access our web site to verify and/or download the latest driver versions. The web address for driver downloads is:

<http://www.racalinstruments.com/downloads>

If you have any questions about software driver downloads or our privacy policy, please contact us at

info@racalinstruments.com.

WARRANTY STATEMENT

All Racal Instruments, Inc. products are designed and manufactured to exacting standards and in full conformance to Racal Instruments ISO 9000/2000 procedures.

For the specific terms of your standard warranty, or optional extended warranty or service agreement, contact your Racal Instruments customer service advisor. Please have the following information available to facilitate service.

1. Product serial number
2. Product model number
3. Your company and contact information

You may contact your customer service advisor by:

E-Mail:	Helpdesk@racalinstruments.com	
Telephone:	+1 800 722 3262	(USA)
	+44(0) 8706 080134	(UK)
Fax:	+1 949 859 7309	(USA)
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RETURN of PRODUCT

Authorization is required from Racal Instruments before you send us your product for service or calibration. Call your nearest Racal Instruments support facility. A list is located on the last page of this manual. If you are unsure where to call, contact Racal Instruments, Inc. Customer Support Department in Irvine, California, USA at 1-800-722-3262 or 1-949-859-8999 or via fax at 1-949-859-7139. We can be reached at: helpdesk@racalinstruments.com.

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FOR YOUR SAFETY

Before undertaking any troubleshooting, maintenance or exploratory procedure, read carefully the **WARNINGS** and **CAUTION** notices.



CAUTION
RISK OF ELECTRICAL SHOCK
DO NOT OPEN



This equipment contains voltage hazardous to human life and safety, and is capable of inflicting personal injury.



If this instrument is to be powered from the AC line (mains) through an autotransformer, ensure the common connector is connected to the neutral (earth pole) of the power supply.



Before operating the unit, ensure the conductor (green wire) is connected to the ground (earth) conductor of the power outlet. Do not use a two-conductor extension cord or a three-prong/two-prong adapter. This will defeat the protective feature of the third conductor in the power cord.



CAUTION
SENSITIVE ELECTRONIC DEVICES
DO NOT SHIP OR STORE NEAR
STRONG ELECTROSTATIC,
ELECTROMAGNETIC, MAGNETIC OR
RADIOACTIVE FIELDS

Maintenance and calibration procedures sometimes call for operation of the unit with power applied and protective covers removed. Read the procedures and heed warnings to avoid “live” circuit points.

Before operating this instrument:

1. Ensure the proper fuse is in place for the power source to operate.
2. Ensure all other devices connected to or in proximity to this instrument are properly grounded or connected to the protective third-wire earth ground.

If the instrument:

- fails to operate satisfactorily
- shows visible damage
- has been stored under unfavorable conditions
- has sustained stress

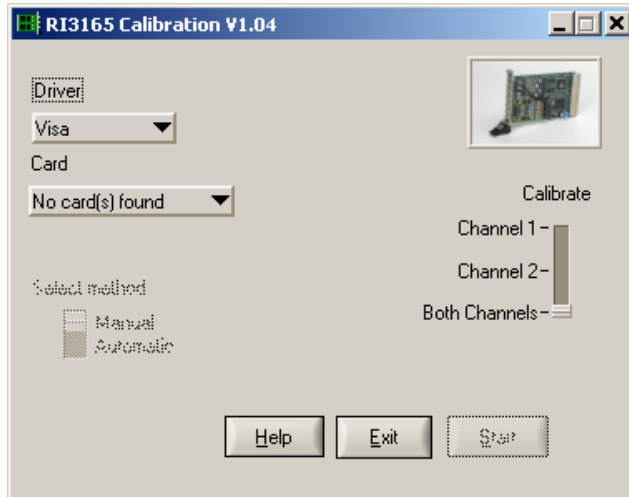
Do not operate until performance is checked by qualified personnel.

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The Calibration Procedure

1) Start the Calibration Utility (980899-004)

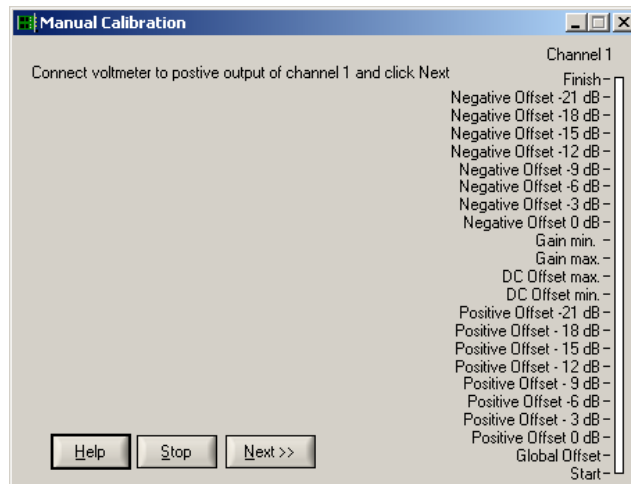


2) Select the card

If using VISA, use NI-MAX to locate the card. If using the kernel driver, use the Windows Device Manager.

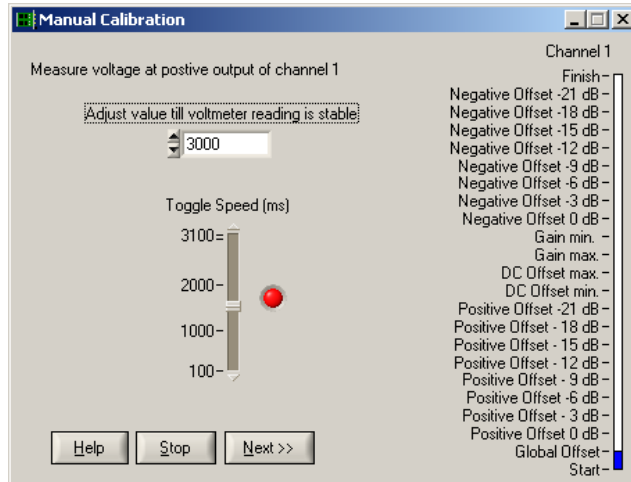
3) Select channel(s)

Select the channel(s) to be calibrated and press the Start button.



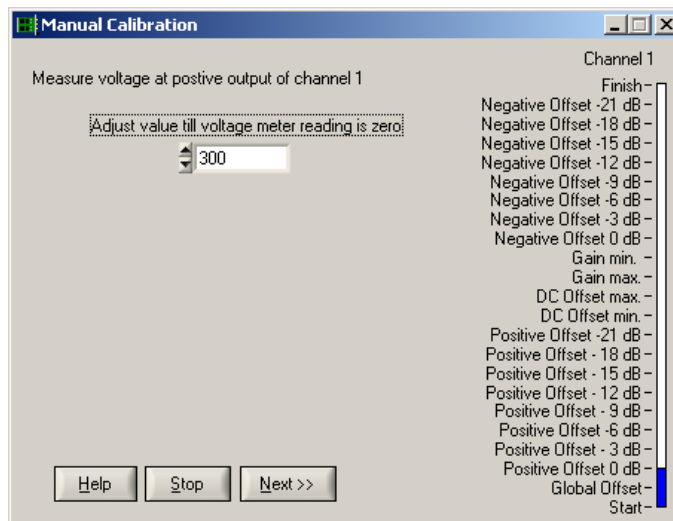
4) Connect Voltmeter

Connect the positive output of the channel to be calibrated to a(n) (accurate) voltmeter (e.g. Keithley 2000 or Agilent 3458A). Press the Next button to continue.



5) Offset balance calibration

The output voltage should toggle between two voltages. The toggle speed can be adjusted with the slide “Toggle Speed (ms)”. Change the calibration value till the voltage at the output varies less than 300 uV. Press the Next button to continue.



6) Offset Calibration at Positive Output

Change the calibration value till the output voltage is 0 volt (as close as possible). Performed the offset calibration for the 8 steps attenuator positions (0 dB ... 21 dB, 3 dB step).

7) DC Offset min. and max. voltages

Fill in the measured voltages. Press enter after changing the values!

8) Gain min. and max. voltages

Fill in the measured voltages. Press enter after changing the values!

9) Offset Calibration at Negative Output

Connect the voltmeter to the negative output. Perform the same calibration steps as performed at step 6.

10) Finish

After calibrating the channel(s) press finish to store the new calibration value in the on board eeprom of the 3165. If the Stop button is pressed during the installation procedure, the new calibration values are lost.

Product Support

Racal Instruments has a complete Service and Parts Department. If you need technical assistance or should it be necessary to return your product for repair or calibration, call 1-800-722-3262. If parts are required to repair the product at your facility, call 1-949-859-8999 and ask for the Parts Department.

When sending your instrument in for repair, complete the form in the back of this manual.

For worldwide support and the office closes to your facility, refer to the Support Offices section on the following page.

Warranty

Use the original packing material when returning the 3165 (980899-004) to Racal Instruments for calibration or servicing. The original shipping container and associated packaging material will provide the necessary protection for safe reshipment.

If the original packing material is unavailable, contact Racal Instruments Customer Service for information.

Support Offices

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REPAIR AND CALIBRATION REQUEST FORM

To allow us to better understand your repair requests, we suggest you use the following outline when calling and include a copy with your instrument to be sent to the Racal Instruments Repair Facility.

Model _____ Serial No. _____ Date _____

Company Name _____ Purchase Order # _____

Billing Address _____
City _____

State/Province _____ Zip/Postal Code _____ Country _____

Shipping Address _____
City _____

State/Province _____ Zip/Postal Code _____ Country _____

Technical Contact _____ Phone Number () _____

Purchasing Contact _____ Phone Number () _____

1. Describe, in detail, the problem and symptoms you are having. Please include all set up details, such as input/output levels, frequencies, waveform details, etc.

2. If problem is occurring when unit is in remote, please list the program strings used and the controller type.

3. Please give any additional information you feel would be beneficial in facilitating a faster repair time (i.e., modifications, etc.)

4. Is calibration data required? Yes No (please circle one)
Call before shipping Ship instruments to nearest support office.

Note: We do not accept
"collect" shipments