

RZ2 BioAmp Processor

Operator's Manual



DT

RZ2 BioAmp Processor Operator's Manual

Copyright

© 2008 Tucker-Davis Technologies, Inc. (TDT). All rights reserved.

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose without the express written permission of TDT.

Tucker-Davis Technologies
11930 Research Circle
Alachua, FL 32615
USA

Phone: 386.462.9622

Fax: 386.462.5365

Notices

The information contained in this document is provided “as is,” and is subject to being changed, without notice. TDT shall not be liable for errors or damages in connection with the furnishing, use, or performance of this document or of any information contained herein.

The latest versions of TDT documents are always online at www.tdt.com/support.htm.



A **CAUTION** informs users when failure to take or avoid a specified action could result in damage to the product or loss of data.

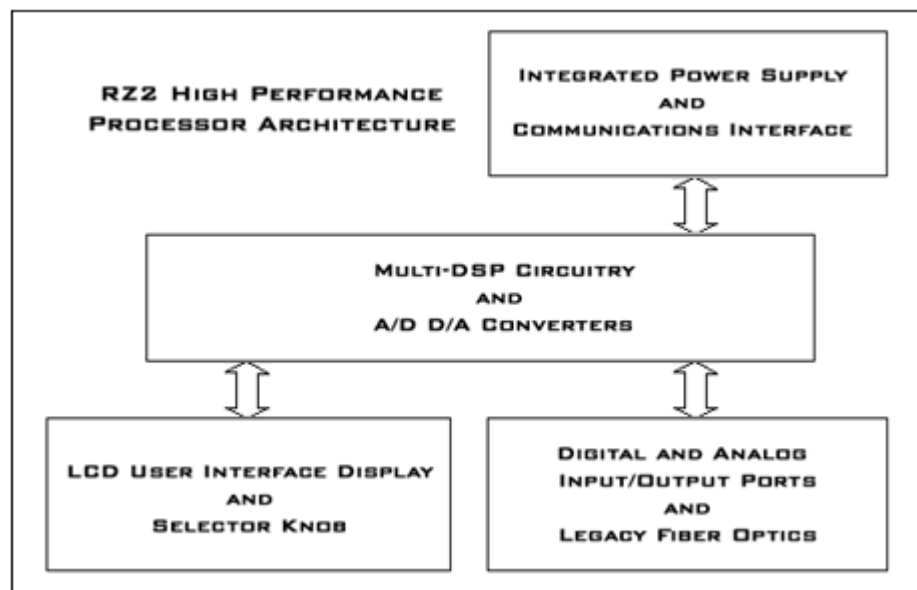
A **WARNING** calls attention to an operating procedure or practice that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

Operator's Manual

RZ2 High Performance Processor



The RZ2 High Performance Processor is the first in TDT's Z-Series line of ultra high performance processors and has been designed for high channel count neurophysiological recording and signal processing. The RZ2 offers the ultimate in performance by building on the strengths of its predecessors while improving flexibility and overall processing power.



Functional Diagram

The RZ2 device chassis houses an integrated zBUS communication interface and power source.

Power Supply

The RZ2's power supply is integrated into the device and is shipped from the factory with the desired voltage setting (115 V or 230V) preset. If you need to change the voltage settings for different regional use please contact TDT support at 1-386-462-9622 or email support@tdt.com.

Using the RZ2 Processor Device

This manual provides the directions necessary for powering the RZ2 High Performance Processor on and off as well as its communications functionality and User Interface features. Refer to the System 3 Manual provided by TDT for specific instructions on how to program the RZ2 Processor device.

Applying Power to the RZ2



CAUTION! Allow at least 2 cm clearance from each side of the RZ2 chassis for proper cooling. A ventilation fan is provided on the each side of the RZ2 chassis. Installation of the RZ2 chassis with the ventilation obstructed may cause a malfunction or fire.

Use only the supplied power cord.

To turn the RZ2 on:

1. Position the RZ2 chassis so that both the power switch and power cord may be accessed easily.
2. Ensure that the power switch is off and connect the power cord.
3. Turn the power switch on and check that the power switch's blue LED is illuminated.

Disconnecting Power from the RZ2



CAUTION! When removing the power cord from either the power supply or socket outlet, grasp the plug, not the cord, in order to avoid damaging the cable.

To disconnect the RZ2:

1. Turn off the power switch.
2. Disconnect the power cord from the power supply.
3. Disconnect the power cord from the wall socket plug.

The RZ2 Communications Interface

The RZ2's Optibit optical interface is integrated into the device and connectors are provided on the back panel. The connectors on the fiber optic pair used for PC communication are color coded for correct wiring.



CAUTION! The fiber-optic cables have raised keys on one side of the connector. There are also keyway notches on the inside of the connector on the RZ2 communications interface module; to avoid damage to the interface and cables, the fiber-optic cable should be oriented so that the keys on the cable connectors line up with the keyway notches on the module.

The Indicator Light

A front panel switch turns on the RZ2 power supply and includes an indicator light. The power switch's blue LED will illuminate when the chassis is switched on.

RZ2 Display LCD



CAUTION! To avoid potential damage, do not place any sharp objects near the RZ2 Display LCD.

The LCD display shows information about each DSP, the optical PC interface, the PZ preamplifier and system I/O. A selection knob allows the user to highlight a section of the screen to display more detailed information. Rotate the selection knob to select a system component. Once the selection has been made, push the knob and expand the information view. *Refer to the RZ2 User Guide in the System 3 Manual for more information.*

RZ2 Input and Output Ports



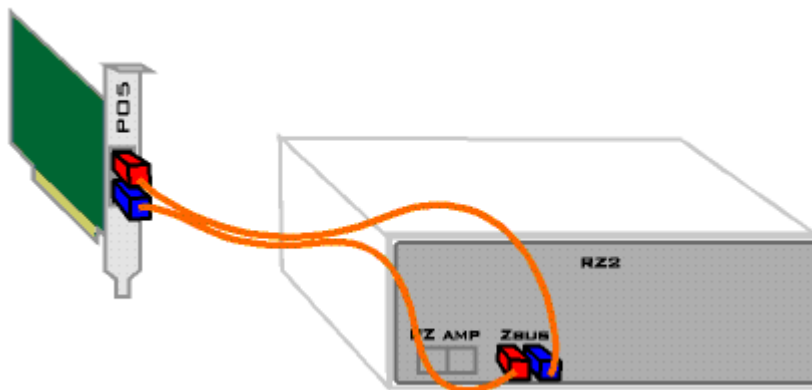
CAUTION! The input and output ports located on the front panel of the RZ2 chassis contain sensitive electronics. *Refer to the RZ2 Technical Specifications in the System 3 Manual before making any connections.*

The RZ2 is equipped with several different analog and digital I/O capabilities. The high speed and legacy fiber optic ports allow a direct connection to Z-Series or Medusa Preamplifiers. The RZ2 also includes onboard D/A and A/D conversion for stimulus generation, experiment control, and input of signals from a variety of other analog sources. Digital and analog source channels may be accessed via standard 25-pin I/O connectors labeled Digital I/O and Analog I/O. Additionally, digital source channels can be accessed through front panel BNCs marked Port A and Port C, while analog source channels can be accessed through Port D and Port E respectively. *Refer to the RZ2 User Guide in the System 3 Manual for more information.*

Connecting the RZ2 Interface to your PC

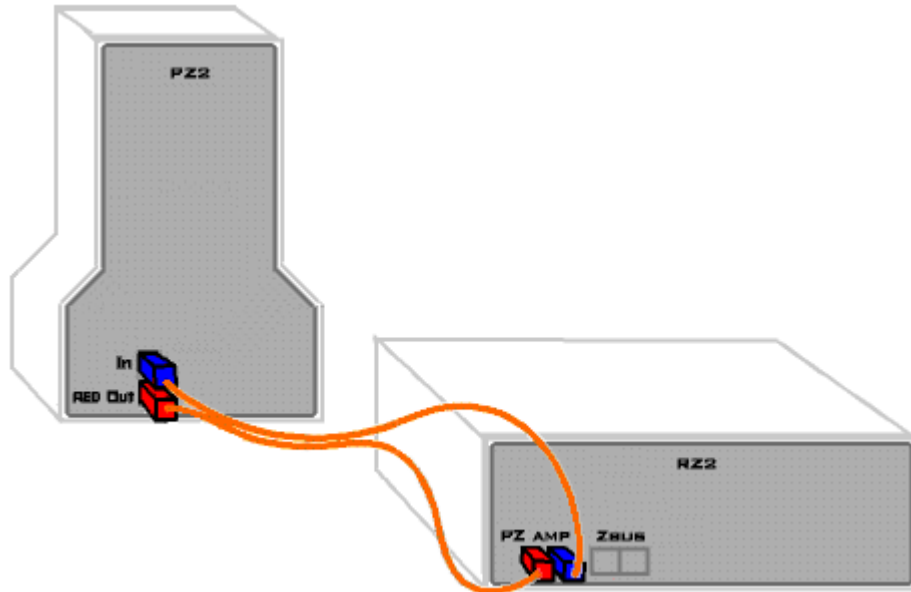
Before connections can be made from the RZ2 to your PC, the PCI interface card must be installed inside your PC. *For more information refer to Installing the Optibit Interface in the System 3 Installation Guide.*

After the necessary connections have been made to your PC connections from the RZ2 to the Optibit interface card are shown in the following diagram.



Connecting the RZ2 Interface to a PZ Preamplifier

When connecting the RZ2 to any PZ Preamplifier, ensure that the wires are inserted correctly. The RED label on the back of the RZ2 denotes the input for the red colored fiber optic wire. Similarly, another label titled RED is shown on the back of the PZ Preamplifier.



Maintaining the RZ2

Safety Notices

This device has passed rigorous testing by Underwriters Laboratories and is UL compliant for CAT II installation in laboratories and other indoor environments. Before applying power to the RZ2 chassis, verify that the correct safety precautions are taken.



WARNINGS! Read the following warnings prior to operation.

- If the device is damaged, or fails to operate according to the specifications described in this manual, disconnect the power cord and contact TDT support immediately.
- The mains disconnect for the device is the power cord. To completely disconnect power to the device, the power cord must be disconnected.
- The power cord is to be readily accessible after installation and during operation.
- Before applying power to the device, you must correctly connect the power cord to a properly rated standard socket outlet provided with a protective earth contact.
- In the event of impaired ground protection, avoid using the device to prevent possible damage.
- When removing the power cord from either the power supply or socket outlet, grasp the plug, not the cord, in order to avoid damaging the cable.

- Do not attempt to disassemble the power supply or chassis by removing any of the exterior housing of the RZ2. If you experience any issues, contact TDT support immediately.
- Do not attempt to alter this device in any way that deviates from its intended operation as described in this operator's manual.
- Capacitors contained inside the device may retain their charge even after power has been disconnected from its supply source.
- Operation of this device in the presence of flammable gases or fumes is strictly prohibited to avoid definite safety hazards.
- Do not subject this device to excessive vibration or shocks during handling or shipping, and avoid dropping the device.
- Although there is a protective screen over the ventilation fan, do not attempt to stick any objects into the fan. This may result in injury or damage to the device.
- Do not attempt to store this device where it may be exposed to prolonged periods of excessive sunlight, high temperatures, high humidity, or condensation. If exposed to such conditions, the device may no longer work properly and its specifications may no longer be satisfied.
- The device is for indoor use only and is not waterproof; do not get the device wet.
- Do not attempt to use this device in a manner unspecified by TDT.

Cleaning the RZ2 Processor Device

To clean the device:

1. Remove power from the RZ2 device chassis.
2. Clean the external surfaces and LCD screen of the device with a soft, dry cloth.
3. Do not attempt to disassemble and clean the inside of the device.

RZ2 Technical Specifications

Technical specifications for the RZ2 Processor Device. *Refer to the RZ2 Technical Specifications in the System 3 Manual for more information.*

Chassis	
Height	6U
Width	Standard 19'' rack mount
Power Supply (Integrated)	
Maximum Working Voltage	HI to earth ground 230V max LO to earth ground 230V max
Main Voltage Rating	115/230 V, 50/60 Hz, 40 VA AC
Installation Category	CAT II

Environmental	
Operating Temperature	0 to 40°C
Storage Temperature	5 to 40°C
Humidity	80% for temperatures up to 31°C, decreasing linearly to 50% RH at 40°C
Maximum Altitude	2,000 m
Pollution Degree	2 (Indoor use only)