Rodeo Interface with Daktronics Matrix Displays

Technical Guide

DD1660229 *Rev 0 – 14 August 2009*

DAKTRONICS

201 Daktronics Drive PO Box 5128 Brookings, SD 57006-5128
Tel: 800-325-8766 605-697-4300 fax: 605-697-4700
www.daktronics.com email: helpdesk@daktronics.com

DAKTRONICS

DD1660229
Product 1163
Rev 0 14 August 2009

DAKTRONICS INC.

Table of Contents

Section 1: Introduction

1.1 How To Use This Manual

The purpose of this manual **is to** assist users with connecting the timing console, results computer, and displays together to get the most out of a rodeo timing system.

Figure 1illustrates the Daktronics drawing numbering system. Daktronics identifies individual engineering drawing by their drawing number (7087-P08A-69945 in the example), which is located in the lower right corner of the drawing. This manual refers to drawings by their last set of numbers and the letter preceding them. The example would be ***Drawing A-69945.***

DAKTRONICS, INC. BROOKINGS, SD 57006		
PROJ: BASKETBALL		
TITLE: SEGMENTATION, 7 SEG BAR DIGIT		
DES. BY: BPETERSON	DRAWN BY: TNELSON	DATE: 8 JUL 01
	APPR. BY: AVB	7087-P08A-69945
	SCALE: 1 = 4	

Figure 1: *Daktronics Drawing Label*

Reference drawings are grouped and inserted in alphanumeric order in ***Appendix A: Reference Drawings.***

Additionally, any drawing referenced within a particular subsection is listed at the beginning of that subsection in the following manner:

Reference Drawings:
Segmentation, 7 Seg Bar Digit ..... **Drawing A-69945**

Daktronics identifies manuals by their engineering document (ED or DD) number, which is located on the cover page of the manual. For example, this manual would be referred to as ***DD1660229***.

With questions regarding the safety, installation, operation or service of these systems, contact Daktronics. For more information on Daktronics Customer Service refer to ***Section 5***.

Important Safeguards:

1. Read and understand these instructions before making a connection.
2. Do not drop the control console or allow it to get wet.
3. Be sure the display is properly grounded with an earth-ground electrode at the display location.
4. *Disconnect power to the display when it is not in use.*
5. *Disconnect power when servicing the display.*
6. Do not modify the display structure or attach any panels or coverings to the display without the written consent of Daktronics, Inc.

Daktronics builds rodeo timing equipment for long life and require little maintenance. However, from time to time, certain display components will have to be replaced. The Replacement Parts List in ***Section 4*** provides the names and part numbers of components that may require replacement during the life of this display.

Following the Replacement Parts List is an explanation of Daktronics Exchange and Repair & Return Programs. Refer to these instructions if replacing or repairing any timing component.

1.2 Manual Overview

This manual includes the following sections:

- **Section 1:** Provides an overview of the product, product safety information and labeling and numbering descriptions
- **Section 2:** Explains the connection methods to a Venus® 1500 controller
- **Section 3:** Explains the connection methods to a Venus® 7000 controller
- **Section 4:** Explains how to set up display sequences for both types of controller
- **Section 5:** Offers details about who to contact for help and information on Daktronics Exchange and Repair &Return Programs
- **Appendix A:** Contains all drawings referenced in this manual
- **Appendix B:** Contains the Daktronics Warranty and Limitation of Liability

1.3 Software Conventions

This manual contains the following software conventions and terminology:

Bold	Indicates an item that requires direct action, such as clicking, pressing, selecting or formatting.
Italics	Indicates onscreen text or labels that are not clickable.
Bold Italics	Used to reference items within the manual, such as figures or sections, as well as other documents and important notes.
[X]	Represents a keyboard key that needs to be pressed.
"Quotes"	Text or commands that may be typed. Quotes also indicate folder names.
Click	Press and release the left mouse button.
Double-click	Press and release the left mouse button twice.
Right-click	Press and release the right mouse button.
Select	Highlight or mark, such as by placing a check mark ✓ in a nearby box; clicking will not necessarily perform an action.
>	Followed by (ex. **File > Open**).

Many software options can be accessed with the keyboard as well as the mouse. Where applicable, both mouse and keyboard actions are given to perform a command. Many screen buttons have labels that have a letter underlined. Press the key on the keyboard that correlates with the underlined letter to activate that particular button. To activate secondary buttons, press the underlined key while holding **[Shift]**. To activate menu bar items from the keyboard, press the underlined key while holding **[Alt]**.

Section 2: Venus 1500 Connection Methods

This section explains the setup of the OmniSport® 2000 timing console and DakStats® 3000 Rodeo software to a Venus® 1500 version 3 controlled display with an M2 or M3 controller.

The preferred method for communications between the computer with Venus 1500 software and an M2 or M3 controlled display is Ethernet. The Ethernet communications can be wired, fiber or wireless (Ethernet Bridge). This section assumes that communications have already been established between the Venus 1500 computer and the sign by making the physical connections as well as the appropriate network configurations such as the subnets and IP addresses.

Real-Time Data (RTD) from the DakStats 3000 Rodeo software is sent to the display via the Venus 1500 Real Time application. RTD from the OmniSport 2000 can be sent directly to the display's current loop input or through a network via the Daktronics Communication Server (DCS) software.

For displays with copper wire Ethernet connectivity, refer to ***Drawing B-326247***. For displays with fiber Ethernet connectivity, refer to ***Drawing B-299772***. For displays using a wireless Ethernet Bridge, refer to ***Drawing B-326248***.

Reference Drawings:

Riser Diagram; Rodeo..... **Drawing B-299772**
Riser Diagram; Wired Rodeo ..... **Drawing B-326247**
Riser Diagram; Wireless Rodeo..... **Drawing B-326248**

2.1 Connecting the OmniSport 2000

The OmniSport 2000 uses photocells, pushbuttons, judges consoles and the rodeo interface, to time and score rodeo events for display on numeric scoreboards and matrix displays, and can also send that data to the DakStats 3000 Rodeo software. This section focuses on connecting the OmniSport to the matrix display and to DakStats 3000 Rodeo software.

1. Connect a straight through 9-pin male to 9-pin female serial cable (Daktronics part number W-1267) from the Results Port (J6) on the OmniSport 2000 console to an available COM port on the computer with the DakStats 3000 Rodeo software (this may be the same computer running Venus 1500).

   Note: Use the following setup if the OmniSport 2000 console is sending RTD directly to the M2 or M3 controller in the display:

   Use a 9-pin to ¼" stereo phono cable (Daktronics part number 0A-1240-0032) to connect the 9-pin end to the RTD Port (J5) on the OmniSport and plug the ¼" connector into a 2" x 4" J-box (0A-1091-0227) as shown on ***Drawing B-326247***, or connect the ¼" connector into the current loop to fiber converter (0A-1196-0131) as shown on ***Drawing B-299772***. Either connection will run into the display controller.

2.2 DakStats 3000 Rodeo Settings

The DakStats 3000 Rodeo software has an input configured to receive times and scores from the OmniSport 2000 and a separate output to send RTD to Venus 1500 Real Time. Refer to the ***DakStats 3000 Rodeo Software Installation & Operation Manual*** (***ED-14946***) for more information on setting up this program.

DakStats 3000 Rodeo software is typically loaded onto the same computer as the Venus 1500 software. The first question is whether DCS is being used. DCS is only used if the OmniSport 2000 console is not connected directly to the M2 or M3 controller in the display.

- If the OmniSport 2000 console is connected directly to the display, then the DakStats 3000 Rodeo input will be configured to the COM port that the Results Port (J6) is connected to.
- If the OmniSport 2000 console will send RTD over the network via DCS, the DakStats 3000 Rodeo software input is configured to receive timer data via a UDP socket.

1. In the DakStats 3000 Rodeo software, go to **Configure > Input/Output**.
2. In the **Input/Output Configuration** window (***Figure 2***), double-click the first empty box under the *Configure Ports* section.

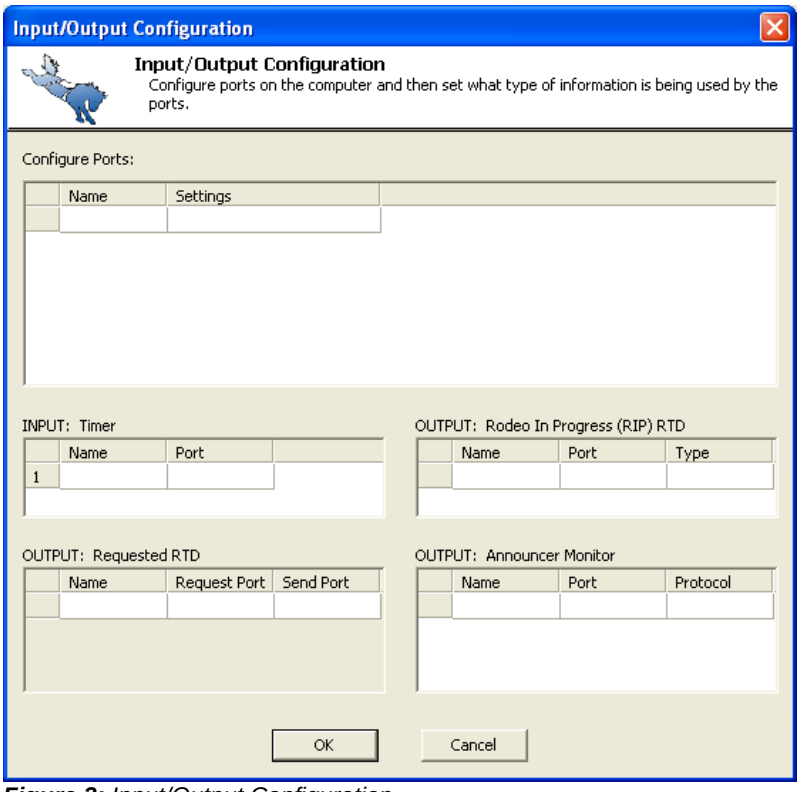


Figure 2: *Input/Output Configuration*

3. In the DLStreams Wizard window (***Figure 3***), enter the following settings:

   - If DCS is not used –
     Type: **COM Port**
     Name: "Timer"
     (click **Com Settings**)
     Port: **COM1**
     Baud: **19200**
     Data Bits: **8**
     Parity: **None**

   - If DCS is used –
     Type: **UDP/IP**
     Name: "Timer"
     (click **Udp Settings**)
     Udp Port: "3002"
     Output: **Broadcast**

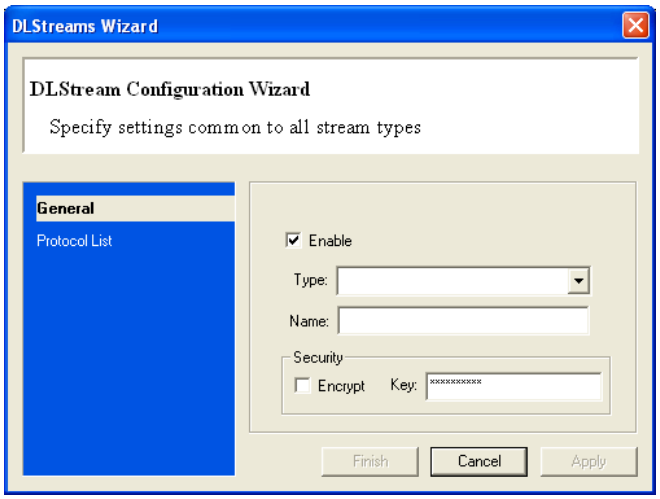


Figure 3: *DLStreams Wizard*

Note: Actual COM port numbers may vary depending on which ports are available on the results computer.

Click **Finish** to save the port settings.

4. Under the *INPUT: Timer* section, click on the first empty box in the *Name* column and type in "Timer". Next click under the *Port* column, and select **Timer** from the list.
5. Double-click the next empty box under the *Configure Ports* section.
6. Back in the DLStreams Wizard window (***Figure 3***), enter the following settings:

   Type: **UDP/IP**
   Name: "Results"
   (click **Udp Settings**)
   Udp Port: "20000"
   Output: **Broadcast**

   Click **Finish** to save the port settings.

7. Under the *OUTPUT: Rodeo In Progress (RIP) RTD* section, click on the first empty box in the *Name* column and type in "Results". Next click under the *Port* column, and select **Results** from the list. Then select **Serial** under the *Type* column.

   The difference between Serial and Network is the amount of data being sent across. In most cases, whether the connection between the DakStats 3000 Rodeo software and Venus 1500 Real Time is serial or network, select serial. Doing so limits the amount of data and also eliminates timing delays because there is less data to send.

8. The settings in the *Input/Output Configuration* window should look like ***Figure 4*** (this window will look like ***Figure 5*** if using DCS):

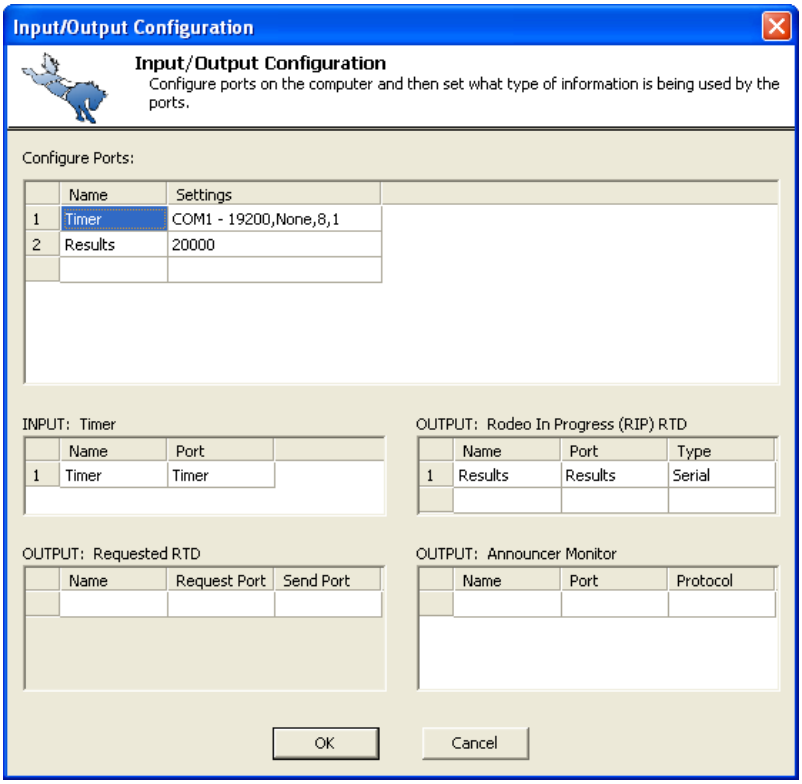


Figure 4: *Input/Output Settings*

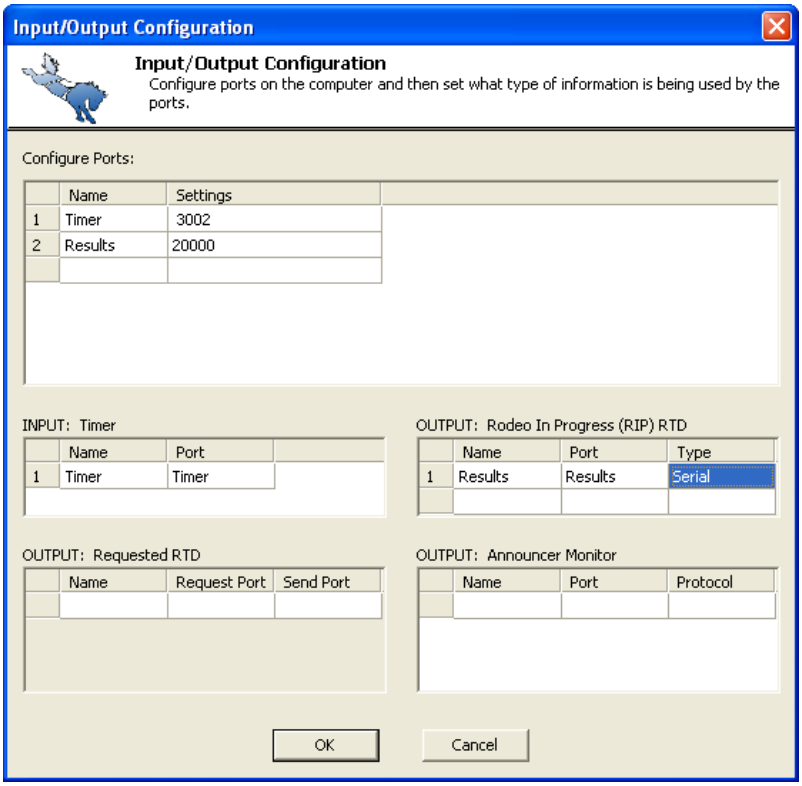


Figure 5: *Input/Output Settings (using DCS)*

2.3 Venus 1500 Real Time Settings

The Venus 1500 Real Time application relays the data from timing console and the DakStats 3000 Rodeo software to the internal RTD buffer of the display. This application must remain open at all times to keep outputting RTD.

Note: If the Venus 1500 Shell does not have the Venus 1500 Real Time icon (***Figure 6***), first make sure that the Venus 1500 Real Time software key (Daktronics part number 0A-1147-0011) is plugged into a USB port on the computer. If it is plugged in and the icon is still not showing up, the driver may need to be re-installed. Please contact Customer Support with any questions.

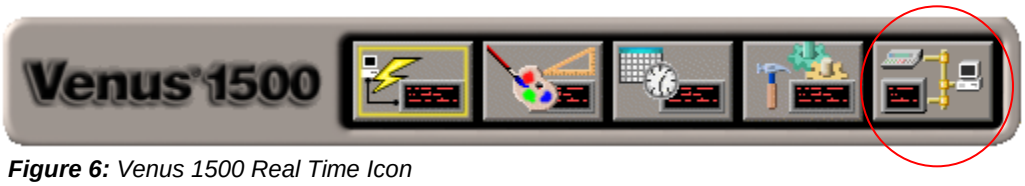


Figure 6: *Venus 1500 Real Time Icon*

1. Click the Venus 1500 Real Time icon (***Figure 6***).
2. In the Venus 1500 Real Time main window (***Figure 7***), double-click on Input 2 (Input 1 is reserved for data coming directly from the timing console).

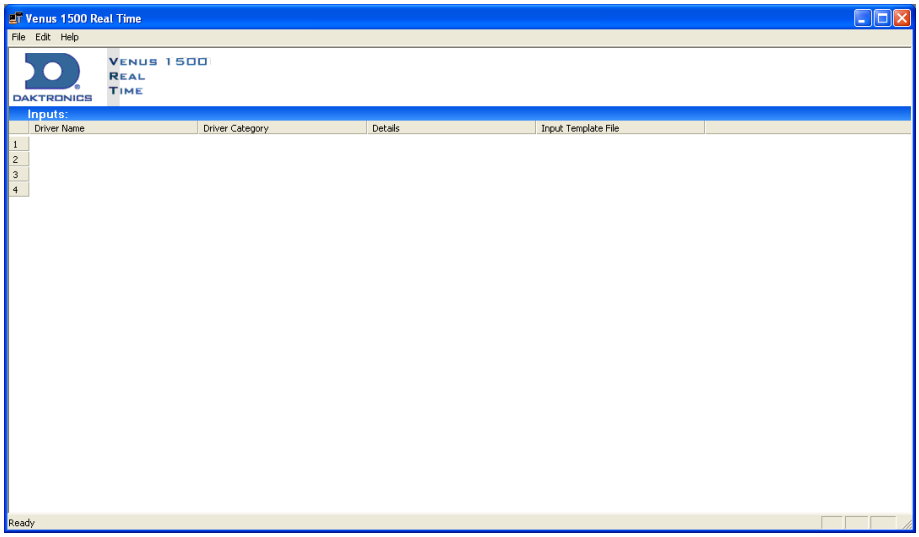


Figure 7: *Venus 1500 Real Time*

3. In the *Input Properties* window (***Figure 8***), click **Configure**.

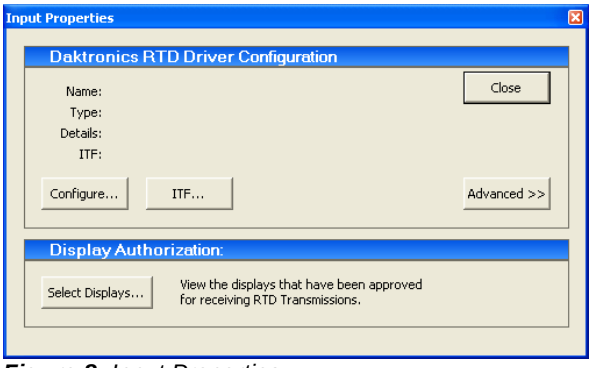


Figure 8: *Input Properties*

4. In the *Configure Input* window (***Figure 9***):
   a. Select **UDP Port**.
   b. Click **OK**.

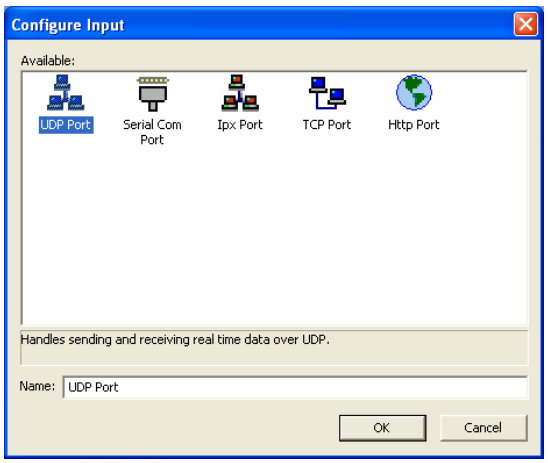


Figure 9: *Configure Input*

5. In the UDP Port window (***Figure 10***):
   a. Set the *Udp Port* to "20000".
   b. Click **OK**.

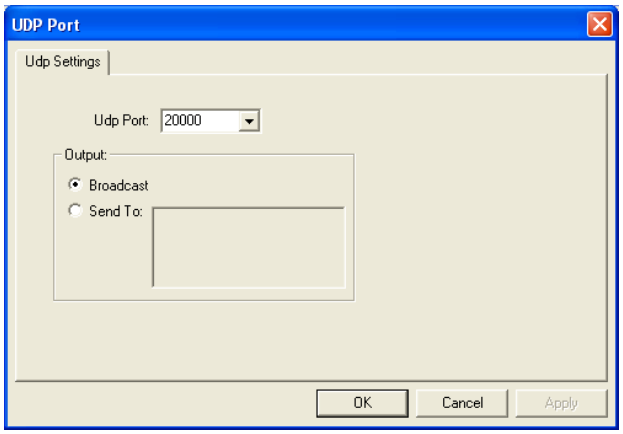


Figure 10: *UDP Port Settings*

6. Back on the *Input Properties* window (***Figure 8***), click **ITF**.
7. In the *Select An Input Template* window (***Figure 11***), click the drop-down list and select **Browse**.

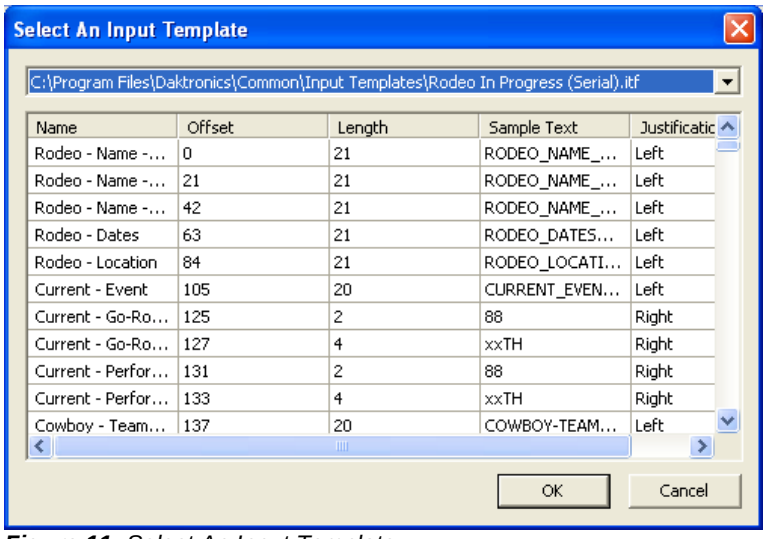


Figure 11: *Select An Input Template*

8. Navigate to "C:ProgramFiles\Daktronics\Common\Input\Templates" and select "Rodeo In Progress (Serial).itf".

   Note: If this file does not show up on the list, it will need to be copied from the "C:\Program Files\Daktronics\DsRodeo" directory to "C:\Program Files\Daktronics\Common\Input Templates".

9. Click **OK**.
10. Back on the *Input Properties* window (***Figure 8***), click **Select Displays**. Choose the display that the data will be sent to and click the arrow to move it into the *Authorized for RTD Input* column, and then click **Close**.

2.4 Venus 1500 Controlled Displays

The primary OmniSport 2000 console will be connected via current loop communications directly to TB1 pins 2 and 6 on the M2 or M3 controller in the display (M2 or M3 varies depending on the display model).

1. Using the *M2Config* application, verify the settings for ports 1-4. On the **Configuration** tab, click on the **Communications** folder, and then **Ports**. If there is a *Debug port setup*, make sure to delete it, as it will interfere with sending RTD.

   Port 1
   Type: Direct
   Baud Rate: (19,200 for Galaxy Displays)
   (115,200 for Galaxy Pro Displays)
   Number: 1
   Protocol: Venus 1500

   Port 2
   Type: TCP/IP
   Number: 3001
   Protocol: Venus 1500

Port 3
Type: UDP/IP
Number: 3002
Protocol: Daktronics RTD

Port 4
Type: Direct
Number: 2
Protocol: Daktronics RTD
Baud Rate: 19,200

2. Connect the cable from the OmniSport 2000 RTD Port (J5) or J-box to the display.

3. Test the connection from the OmniSport 2000 to the display by running an RTD sequence that shows the running time from the console. Refer to ***Section 4.3*** on how to make Venus 1500 sequences.

4. If nothing shows up on the display:

   - Is the sequence playing created by using a custom ITF?
   - Are the ports set up correctly for the display (see Step 3 above)?
   - Is it connected to the RTD Port (J5) on timing console?
   - Are the settings in the OmniSport 2000 console correct?
   - Does the wire terminate correctly in the J-box and on the display?
   - If the OmniSport 2000 console is connected via Ethernet, verify that everything is plugged in and set to the correct TCP/IP addresses.

2.5 DCS Connection

Daktronics Communication Server (DCS) is an additional software program that will need to be installed on the same Venus and DakStats 3000 Rodeo computer. DCS is used to receive data from the Results Port (J6) on the OmniSport 2000 console and broadcast the signal out over a network connection to the DakStats 3000 Rodeo software as well as to the M2 or M3 controller within the matrix display.

Using DCS is especially useful with wireless Ethernet communications because it eliminates a second dedicated cable from the RTD Port (J5) on the OmniSport 2000 console to the M2 or M3 display controller.

DCS Settings

DCS will have two ports set up: an input and an output. DCS will take the data in from the OmniSport serially, and output it on a network port to the matrix display and the DakStats 3000 Rodeo software.

1. Open DCS and click the **Ports** tab on the left side of the window.
2. In the *Daktronics Communications Server – Ports* window (***Figure 12***), double-click on an empty port to set up the following two ports:

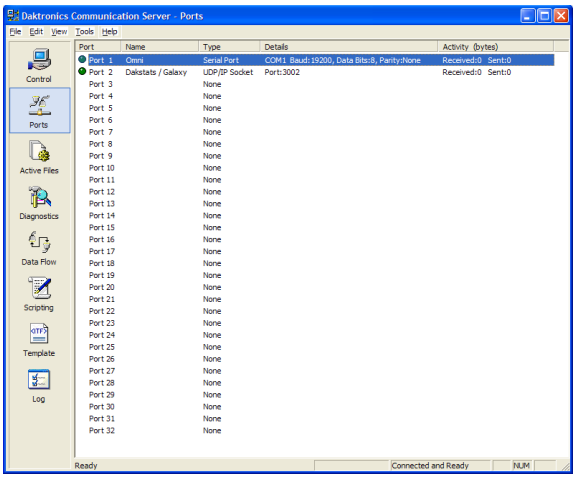


Figure 12: *Daktronics Communications Server- Ports*

Port 1 (***Figure 13)***

Name: "Omni"
Type: **Serial Port**
Port: **COM1**
Baud: **19200**
Data Bits: **8**
Parity: **None**
Input Template:
OS2-RODEO.itf

Note: COM port numbers may vary based on the actual port(s) available on the computer.

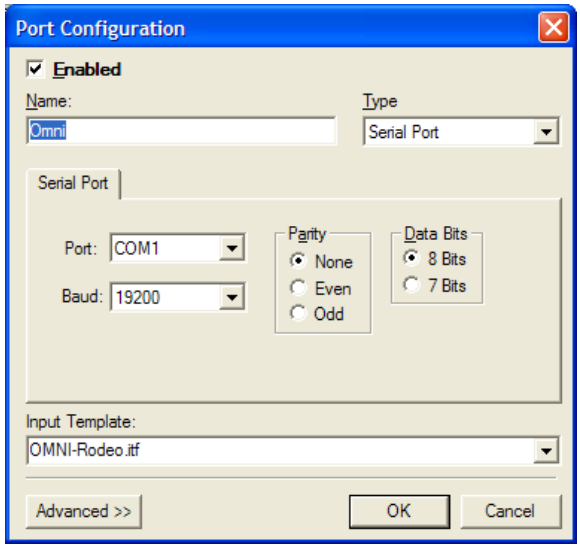


Figure 13: *Port 1 Configuration*

Port 2 (***Figure 14)***

Name: "DakStats/Galaxy"
Type: **UDP/IP Socket**
Port: **3002**
Input Template:
Rodeo In Progress (Serial).ITF

Note: If this file does not show up on the list, it will need to be copied from the "C:\Program Files\Daktronics\DsRodeo" directory to "C:\Program Files\Daktronics\Common\Input Templates".

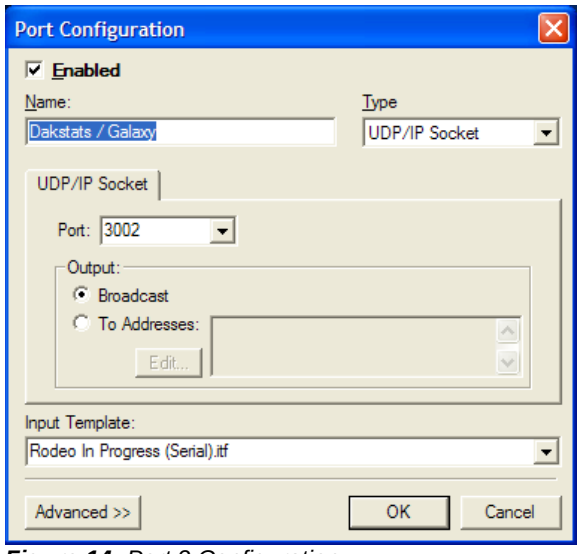


Figure 14: *Port 2 Configuration*

3. After configuring the ports, click on the **Data Flow** tab on the left side of the DCS window. Draw the connection between the two newly created ports, with the *RX* of Port 1 going to the *TX* of Port 2 (***Figure 15***).

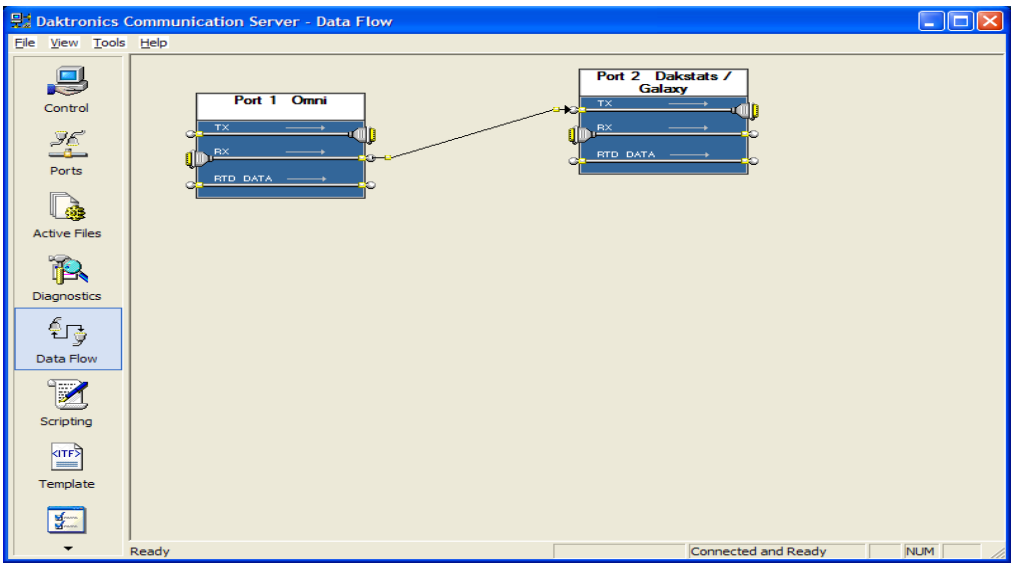


Figure 15: *Daktronics Communication Server- Data Flow*

Section 3: Venus 7000 Connection Methods

This section explains the setup of the OmniSport® 2000 timing console and DakStats® 3000 Rodeo software to a Venus® 7000 controlled display.

The components needed are a Venus 7000 controller, DakStats 3000 Rodeo software, an OmniSport 2000 console, and a Daktronics video display.

Optional components include a Push Button Interface, Judges Consoles, Photocells, Daktronics Communications Server (DCS) software, a Microsoft Loopback Adapter, and a network hub (for network communication method).

Reference Drawings:
System Riser, Rodeo, Pro Star ..... **Drawing B-320179**

3.1 Connecting the OmniSport 2000

The OmniSport 2000 uses photocells, pushbuttons, judges consoles and the rodeo interface, to time and score rodeo events for display on numeric scoreboards and matrix displays, and can also send that data to DakStats 3000 Rodeo software. This section focuses on connecting the OmniSport to the video display and to DakStats 3000 Rodeo software.

1. Connect a straight through 9-pin male to 9-pin female serial cable (W-1267) from the Results Port (J6) on the OmniSport 2000 console to an available COM port on the computer with the DakStats 3000 Rodeo software.

2. Connect a straight through 9-pin male to 9-pin female serial cable (Daktronics part number W-1267) from the RTD Port (J5) on the OmniSport 2000 console to an available COM port on the Venus 7000 computer.

   Note: Typically the connection from the OmniSport 2000 to the RTD input in the Venus 7000 computer is serial. In special cases, the signal may be routed through Daktronics Communication Server (DCS) and sent over a UDP/IP socket instead. Refer to ***Section 2.5*** for more information about configuring DCS.

3.2 DakStats 3000 Rodeo Settings

The DakStats 3000 Rodeo software needs an input configured to receive times and scores from the OmniSport 2000 console and a separate output to send RTD to the Venus 7000. Refer to the ***DakStats 3000 Rodeo Software Installation & Operation Manual*** (***ED-14946***) for more information on setting up this program.

The DakStats 3000 Rodeo software and the Venus 7000 software typically communicate via a network connection. In rare cases, a serial connection may be used. When using network communications, the Venus 7000 computer and the DakStats 3000 Rodeo computer must be networked together on the same Subnet/IP range. If the DakStats 3000 Rodeo software is installed on the Venus 7000 computer and it is not plugged into a router, a Microsoft Loopback Adapter must be installed to allow network communication between the two programs. Visit http://support.microsoft.com/kb/839013 for more information about installing the loopback adapter.

- If the OmniSport 2000 console is connected to the DakStats 3000 Rodeo computer serially, then the DakStats 3000 Rodeo input will be configured to the COM port that the Results Port (J6) is connected to.
- If the OmniSport 2000 console will send RTD over the network via DCS, the DakStats 3000 Rodeo software input is configured to receive timer data from the UDP socket set in DCS. Refer to ***Section 2.5*** for more information about configuring DCS.

1. In the DakStats 3000 Rodeo software, go to **Configure > Input/Output**.
2. In the **Input/Output Configuration** window (***Figure 16***), double-click the first empty box under the *Configure Ports* section.

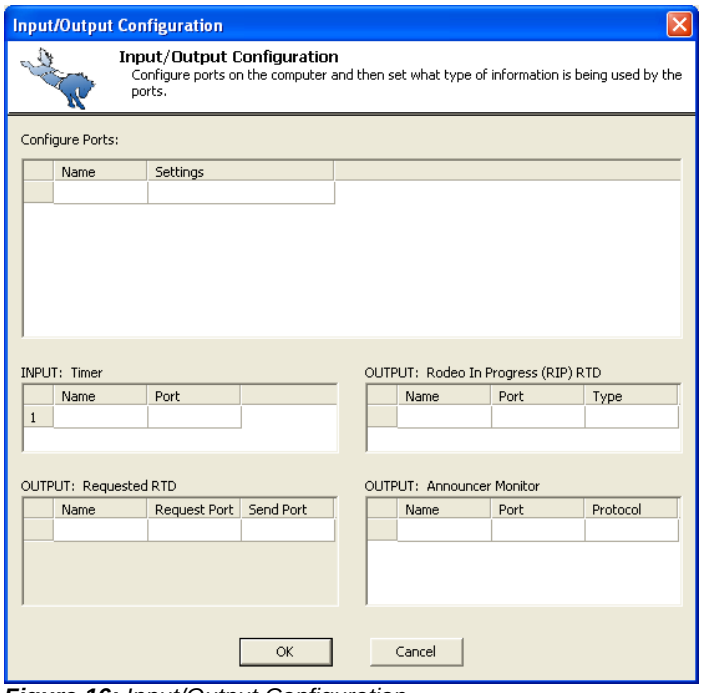


Figure 16: *Input/Output Configuration*

3. In the *DLStreams Wizard* window (***Figure 17***), enter the following settings:

   - If DCS is not used –
     Type: **COM Port**
     Name: "Timer"
     (click **Com Settings**)
     Port: **COM 1**
     Baud: **19200**
     Data Bits: **8**
     Parity: **None**

   - If DCS is used –
     Type: **UDP/IP**
     Name: "Timer"
     (click **Udp Settings**)
     Udp Port: "3002"
     Output: **Broadcast**

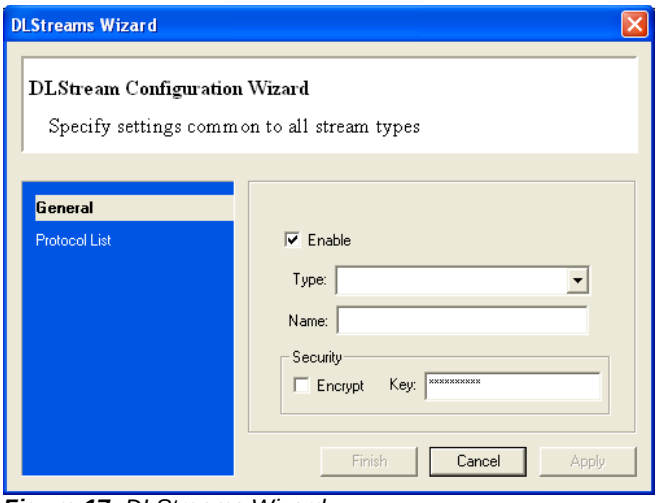


Figure 17: *DLStreams Wizard*

Note: Actual COM port numbers may vary depending on which ports are available on the DakStats 3000 Rodeo computer.

Click **Finish** to save the port settings.

4. Under the *INPUT: Timer* section, click on the first empty box in the *Name* column and type in "Timer". Next click under the *Port* column, and select **Timer** from the list.
5. Double-click the next empty box under the *Configure Ports* section.
6. Back in the *DLStreams Wizard* window (***Figure 17***), enter the following settings:

   Type: **UDP/IP**
   Name: "Results"
   (click **Udp Settings**)
   Udp Port: "20000"
   Output: **Broadcast**

   Click **Finish** to save the port settings.

7. Under the *OUTPUT: Rodeo In Progress (RIP) RTD* section, click on the first empty box in the *Name* column and type in "Results". Next click under the *Port* column, and select **Results** from the list. Then select **Serial** under the *Type* column.

   The difference between Serial and Network is the amount of data being sent. In most cases, whether the connection between the DakStats 3000 Rodeo software and Venus 7000 is physically a serial or network, select **Serial** as the *Type*. Doing so limits the amount of data and also eliminates delays because there is less data to send.

8. The settings in the *Input/Output Configuration* window should look like ***Figure 18*** (this window will look like ***Figure 19*** when using DCS):

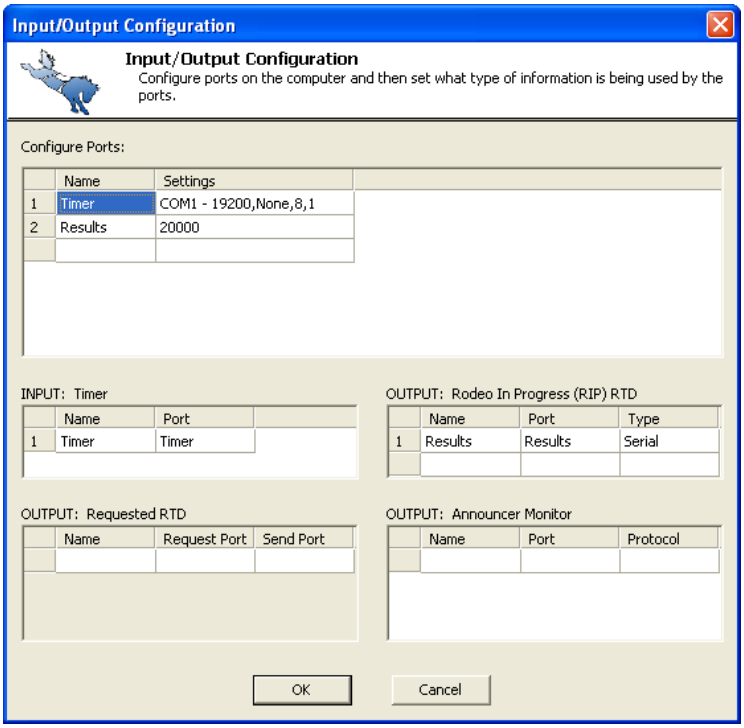


Figure 18: *Input/Output Settings*

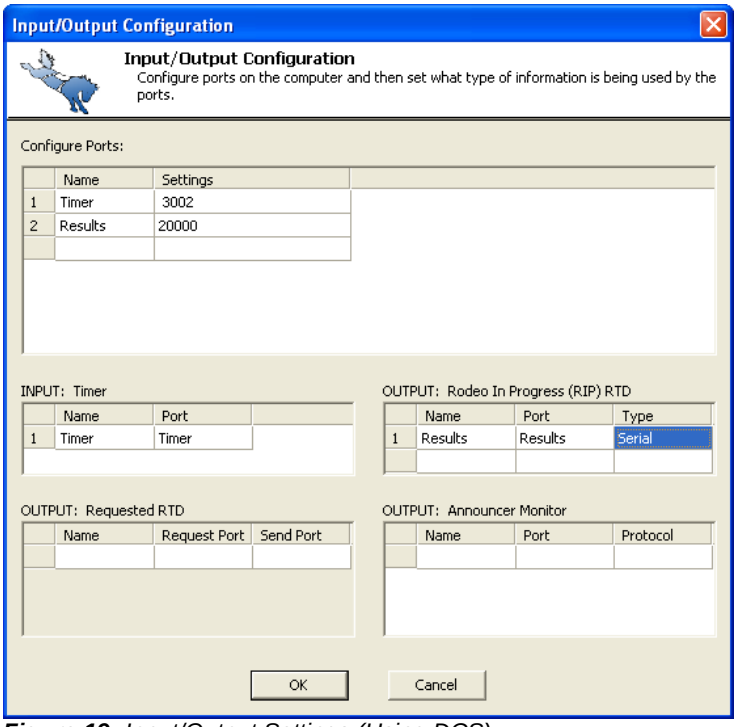


Figure 19: *Input/Output Settings (Using DCS)*

3.3 Venus 7000 Settings

Two RTD ports will need to be set up in the Venus 7000 software to receive information from both the OmniSport 2000 console and DakStats 3000 Rodeo software. Typically RTD is sent from DakStats 3000 Rodeo software to the Venus 7000 over Ethernet. In rare cases, serial ports may be used instead.

- If the OmniSport 2000 console is connected to the Venus 7000 computer via a serial connection, then the RTD input will be configured to the COM port that the RTD Port (J5) is connected to.

- If the OmniSport 2000 console will send RTD over the network via DCS, the RTD input is configured to receive timer data from the UDP socket set in DCS. Refer to ***Section 2.5*** for more information about configuring DCS.

1. On the Venus 7000 Shell, click **Configure**, and then click on the **RTD Inputs** tab.
2. Double-click *Input 1* and set up the port as follows:

Port 1

If DCS is not used (***Figure 20***) -
Name: "OmniSport"
Source Type: **COM PORT**
Baud Rate: **19200**
Source: **COM1**
Parity: **None**
Protocol: **Enhanced**
Data Bits: **8**
Size: "1024"
Default Input Template: **OS2-RODEO.itf**

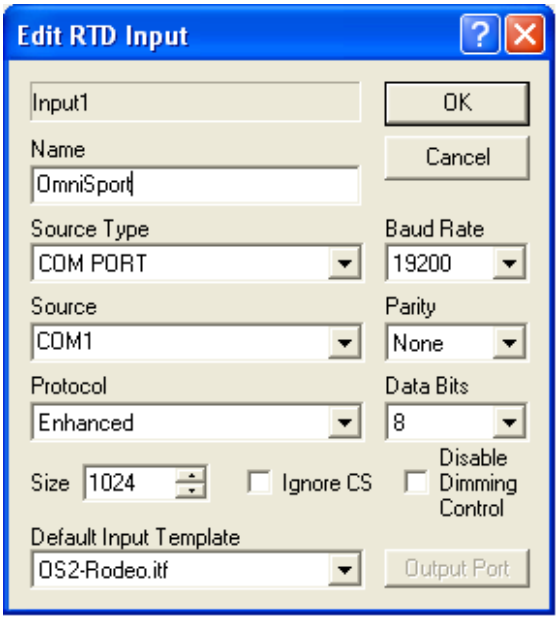


Figure 20: *Edit RTD Input1*

Note: COM port numbers may vary based on the actual port(s) available on the computer.

If DCS is used (***Figure 21***) -
Name: "OmniSport"
Source Type: **UDP/IP SOCKET**
Source: "3002"
Protocol: **Enhanced**
Size: "1024"
Default Input Template: **OS2-RODEO.itf**

Click **OK** when finished.

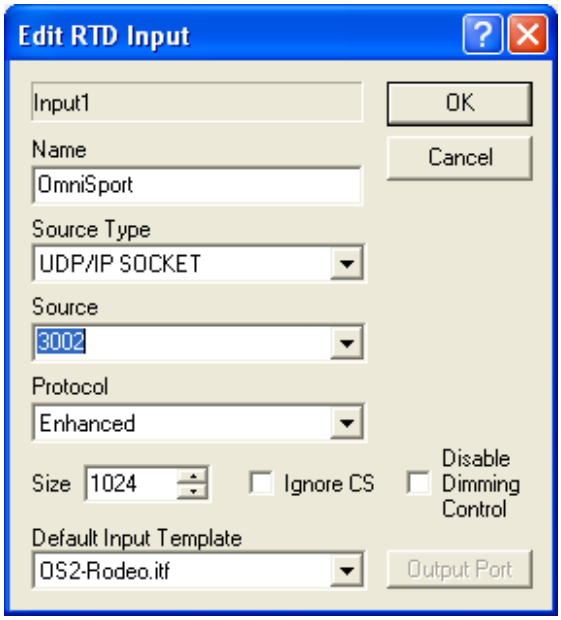


Figure 21: *Edit RTD Input1 (DCS Method)*

3. Double-click *Input 2* and set up the port as follows:

Port 2 (***Figure 22***)

Name: "DakStats Rodeo"
Source Type: **UDP/IP SOCKET**
Source: "20000"
Protocol: **Enhanced**
Size: "4096"
Default Input Template:
Rodeo in Progress (Serial).itf

Note: If this file does not show up on the list, it will need to be copied from the "C:\Program Files\Daktronics\DsRodeo" directory to "C:\V7000".

Click **OK** when finished.

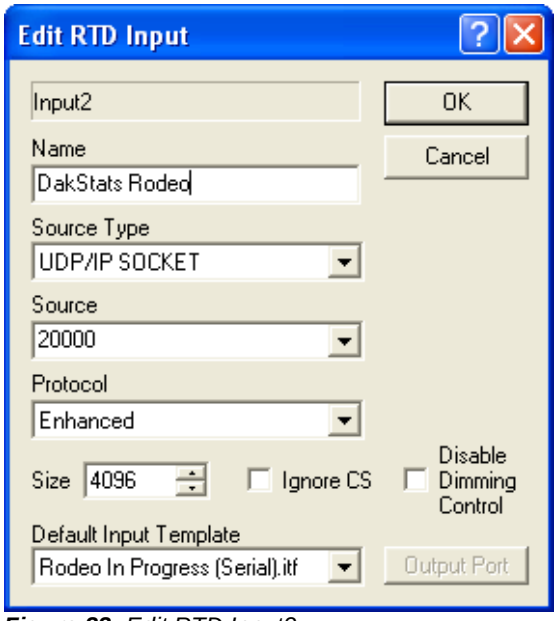


Figure 22: *Edit RTD Input2*

Section 4: How to Create RTD Sequences

4.1 Input Template Files

An Input Template File (ITF) consists of multiple fields that select the start position and length of pieces of RTD in a data stream. To access and save these files, go to http://dakfiles.daktronics.com/downloads/Sports_Products/ITFs/.

Then right-click "OS2-Rodeo.itf", then click **Save Target As** and save as type **Input Template** in the following location:

- Venus 1500: "C:\Program Files\Daktronics\Common\Input Templates"
- Venus 7000: "C:\V7000"

4.2 Venus 7000

Note: Refer to the ***Venus 7000 Controller Operator's Manual*** (***ED-14551***) for more information on setting up RTD display sequences.

1. Open the V7 *Sequence Designer* and create a new sequence for the appropriate sign (**File > New**).

2. Go to **Frame > Insert > Data Frame**.

3. In the *Frame Properties* window (***Figure 23***), select the **Data Field Parameters** tab. Make sure the *Field Type* is set to *RTD* then select a previously created *Input*, either for the OmniSport 2000 console or for the DakStats 3000 Rodeo software computer.

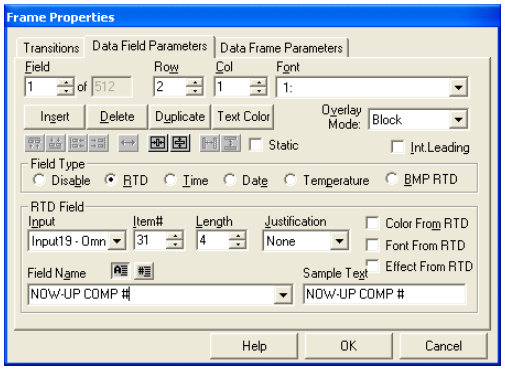


Figure 23: *Frame Properties*

4. Under *Field Name*, select from the list of available information. Use the *Row* and *Col* numbers (or click on the sequence) to adjust the position of the data field.

5. To add another data field, simply increment *Field* in the top left corner of the *Frame Properties* window.

   Figure 24 shows a complete example of a Venus 7000 rodeo sequence.

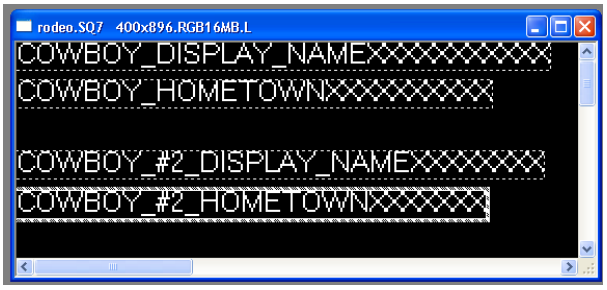


Figure 24: *Sample Venus 7000 Rodeo Sequence*

6. After creating all of the required fields for the data frame, click **OK**. The sequence now contains two frames: the original *Graphic Frame* and the new *Data Frame*; the first *Graphic Frame* must be deleted.

Go to **Frame > Delete** (or press **[Ctrl + Del]**). Then select the range **1 to 1** (***Figure 25***). Click **Delete Range** and then click **Close**. There should now only be one frame, the *Data Frame* and the RTD fields it contains.

Note: It is possible to create multiple frames that can be automatically selected from within the DakStats 3000 Rodeo software. Refer to ***Appendix B*** for more information.

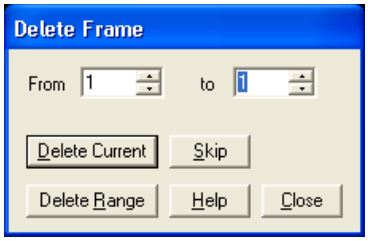


Figure 25: *Delete Frame*

7. Click the preview button (or press **[F5]**). As long as the input source is powered on and in operation, the correct data should show up in the proper location on the sequence. Make any adjustments to the RTD fields or input connections as needed.

8. Save the sequence.

4.3 Venus 1500 Version 3.12

Note: Refer to the ***Venus 1500 Software Version 3 Operation Manual*** (***ED-13530***) for more information on setting up RTD display sequences.

1. Begin by opening the *V1500 Message Studio* from the V1500 shell. Select **File > New** and select the sign for the new RTD sequence.

2. Next, a *Graphic Frame* must be added. To do this, select menu item **Frame >Add > Graphic**. *Graphic Frames* are preferred for RTD because they allow positioning of the RTD boxes exactly where the user desires.

   Note: In the *Sample Text* field, the user can enter the text that will help to identify the information to show on the frame. By default, the data fields show *S's* as sample text.

   The *Justify* option buttons will override the justification settings in the ITF file. This feature is available only when inserting an RTD field in a graphic frame for display with Version 3 controllers.

3. To add an RTD field, go to **Data Fields > Real Time Data**, or select the **RTD** icon from the left hand pane.

   Click anywhere in the *Graphic Frame* and an *RTD Field Properties* window will open.

4. At the top, click the drop-down list box and select a previously configured input. Alternately, select **Custom ITF** and then the browse button. Search for and select the correct ITF for rodeo and click **OK**.

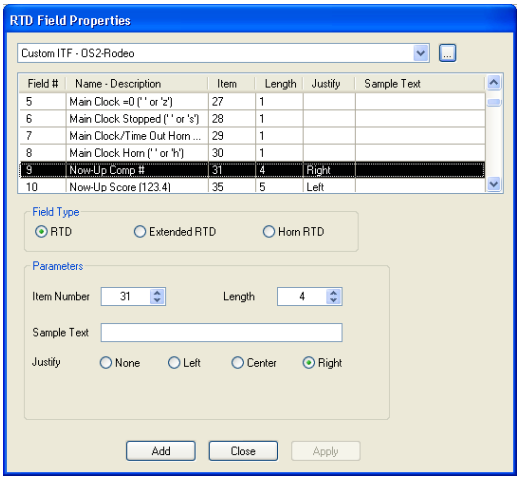


Figure 26: *Add RTD Field*

After selecting an input or Custom ITF, a list of available data from the port will populate (***Figure 26***). Once the desired field type and parameters are chosen, click **Add** to set the field to the frame. Then click **Close** and change the style and alignment of the field boxes inside the frame. The user can now preview the frame but only as long as the input source is powered on and in operation. Refer to ***Figure 27*** for a sample rodeo sequence.

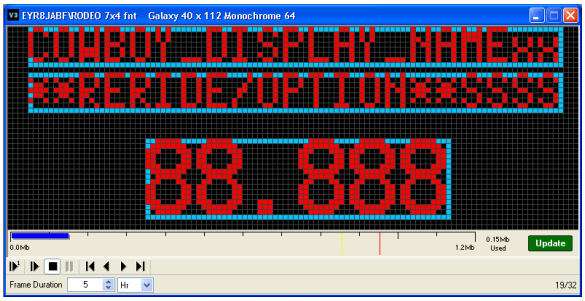


Figure 27: *Sample Venus 1500 Rodeo Sequence*

5. On the right there should be a story board with two frames, a blank *Text Frame* and a second *Graphic Frame* with RTD information. The first frame must be deleted in order for the sequence to display correctly. At the story board, right click on the blank **Text Frame > Delete Frame(s)**. There should only be one frame left: the *Graphic Frame* with RTD information.

6. The frame duration (of frames 14-32) should also be changed from a couple seconds to a couple hours; this ensures the running time will not skip. In the lower left hand corner of the frame, see where it says *Frame Duration*, change the **Min** to **Hr**.

7. To save the message:

   a. Open the *File* menu and select **Save**.

   b. In the **Save Message** dialog box, click on the plus sign next to the display type to open the library containing the folders.

   c. Select the folder where the message will be saved in and type in the name, for example "OS_2000_Rodeo" (***Figure 28***).

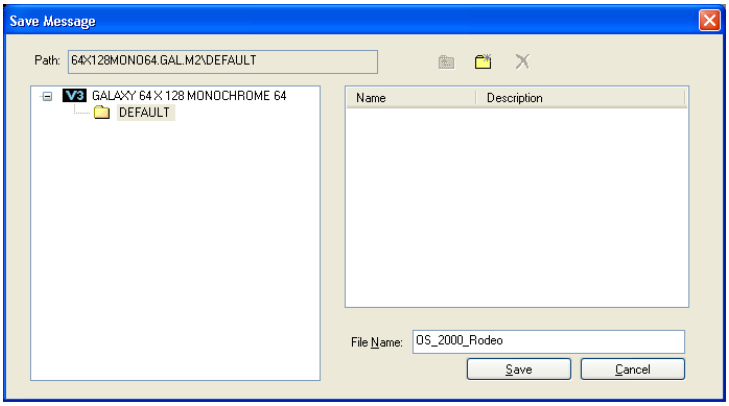


Figure 28: *Save Message*

   d. Click **Save**.

Section 5: Daktronics Exchange and Repair & Return Programs

To serve customers' repair and maintenance needs, Daktronics offers both an Exchange Program and a Repair & Return Program.

5.1 Exchange Program

Daktronics unique Exchange Program is a quick service for replacing key parts in need of repair. If a part requires repair or replacement, Daktronics sends the customer a replacement and the customer sends the defective part to Daktronics. This decreases display downtime.

Before contacting Daktronics, identify these important part numbers:

Timer Serial Number:_____
Contract Number:_____
Date Installed: _____
Daktronics Customer ID Number:_____

To participate in the Exchange Program, follow these steps.

1. Call Daktronics Customer Service:

Market Description	Customer Service Number
Schools (primary through community/junior colleges), religious organizations, municipal clubs, and community centers	877-605-1115
Universities and professional sporting events, live events for auditoriums, and arenas	866-343-6018

2. When the new exchange part is received, mail the old part to Daktronics.

3. If the replacement part fixes the problem, send in the problem part which is being replaced.

   a. Package the old part in the same shipping materials in which the replacement part arrived.

   b. Fill out and attach the enclosed UPS shipping document.

   c. Ship the part to Daktronics. In most circumstances, the replacement part will be invoiced at the time it is shipped.

4. A charge will be made for the replacement part immediately, unless a qualifying service agreement is in place. In most circumstances, the replacement part will be invoiced at the time it is shipped.

5. If the replacement part does not solve the problem, return the part within 30 working days or the full purchase price will be charged.

If, after the exchange is made the equipment is still defective, please contact Customer Service immediately. Daktronics expects immediate return of an exchange part if it does not solve the problem. The company also reserves the right to refuse parts that have been damaged due to acts of nature or causes other than normal wear and tear.

5.2 Repair & Return Program

For items not subject to exchange, Daktronics offers a Repair & Return Program. To send a part for repair, follow these steps:

1. **Call or fax Daktronics Customer Service:**
   Refer to the appropriate market number in the chart listed on the previous page.

2. **Receive a Return Materials Authorization (RMA) number before shipping.**
   This expedites repair of the part.

3. **Package and pad the item carefully to prevent damage during shipment.**
   Electronic components, such as printed circuit boards, should be placed in an antistatic bag before boxing. Daktronics does not recommend packing peanuts in packaging.

4. **Enclose:**

   - Contact name
   - Address
   - Phone number
   - The RMA number
   - A clear description of symptoms

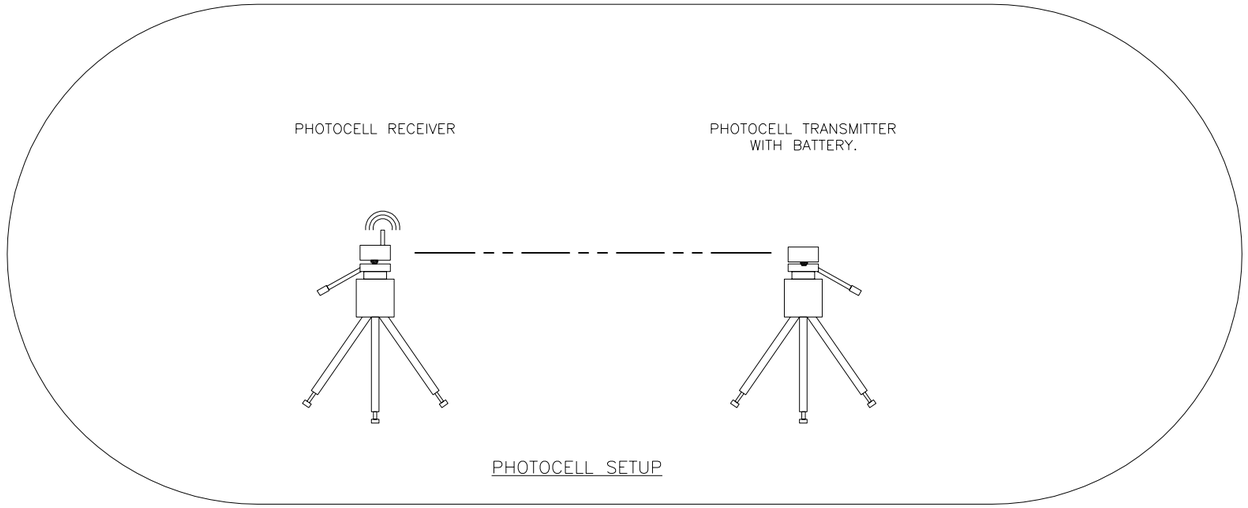
Shipping Address

Daktronics Customer Service
PO Box 5128
331 32nd Ave
Brookings, SD 57006

Daktronics Warranty and Limitation of Liability

The Daktronics Warranty and Limitation of Liability is located in **Appendix C**. The Warranty is independent of Extended Service agreements and is the authority in matters of service, repair, and display operation.

Appendix A: Reference Drawings



GALAXY
OR
GALAXY PRO

RTD
TB1 PIN 2 CL+
TB1 PIN 6 CL–

MAIN PANNEL BOARD
BY CUSTOMER

MD
1

0A–1125–0011
COM BOX, FIBER

DAKSTATS 3000 RODEO SETTINGS

INPUT FROM OMNI	OUTPUT TO V1500
TYPE: COM PORT	TYPE: UPD/IP
NAME: TIMER	NAME: RESULTS
PORT: COM X	UDP PORT: 20000
BAUD RATE: 19200	OUTPUT: BROADCAST
DATA BITS: 8	
PARITY: NONE	

V1500 REALTIME SETTINGS
PORT 2
TYPE: UDP PORT
PORT: 20000
OUTPUT: BROADCAST
ITF: RODEO IN PROGRESS (SERIAL).ITF

W–1456, 6 FIBER
(P–1293 ENDS @12)

WIRELESS
PHOTOCELL RECEIVER
WITH BATTERY

0A–1056–0156 12'
PUSH BUTTON. **UP TO**
3 AVAILABLE

TIMER #1
TIMER #2
TIMER #3
J35
J6
3 PIN XLR

CABLE TO IN–HOUSE
AUDIO
0A–1163–0032

0A–1240–0033
RODEO
INTERFACE

0A–1125–0009
6 POSITION FIBER
SPLICE BOX W/
SINGLE C.L. TO FIBER
0A–1196–0131

W–1360 (10')

FIBER TO
NETWORK
A–1778

W–1823 (30')

0A–1110–0030
CAN BASE STATION.
FUNCT. = 1

@4 TYPICAL

WIRELESS JUDGES CONSOLE
0A–1110–0033
RODEO INSERT: LL–2608

W–1267 (10')

0A–1240–0032

0A–1147–0011
SOFTWARE KEY
VENUS 1500 REAL TIME

W–1547 (20')

J13 POWER
J15 FAR
J14 NEAR
J12 START
J11 FAR
J10 NEAR
J9–S–SWITCH
J8–M–SWITCH
J7–S–INPUT
J6–RESULTS
J5–RTD
J4–E–PORT
J3–SCBD
J2–SCBD
OMNISPORT
2000

0A–1240–0040

USB
USB
NETWORK
LAPTOP COMPUTER
BY CUSTOMER

USB TO COM
PORT ADAPTER
A–1801

PROGRAMS ON LAPTOP:

–VENUS 1500
–VENUS 1500 REAL TIME
–DAKSTATS RODEO (0A–1149–4299)
–MICROSOFT NETWORK LOOPBACK ADAPTER

REV.	DATE	DESCRIPTION	BY	APPR.
03	29 OCT 08	CHANGED NUMBER OF JUDGES CONSOLES FROM 3 TO 4	MJC	
02	27 NOV 07	ADDED SOFTWARE SETTINGS CHANGED FIBER DES TO 6 STRAND	MJC	
01	21 JUNE 07	ADDED 0A–1196–0131 TO 6 POSITION FIBER SPLICE BOX.	AMG	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ:
TITLE: RISER DIAGRAM: RODEO
DES. BY: JWARNE DRAWN BY: AGORDER DATE: 20 MAR 07
REVISION 02 APPR. BY:
SCALE: NONE

1163-R01B-299772

PHOTOCELL RECEIVER

PHOTOCELL TRANSMITTER
WITH BATTERY.

PHOTOCELL SETUP

PRO STAR

V7000 RTD INPUT SETTINGS

INPUT 1
NAME: OMNISPORT
SOURCE TYPE: COM PORT
SOURCE: COMX
BAUD RATE: 19200
PARITY: NONE
DATA BITS 8:
PROTOCOL: ENHANCED
SIZE: 1024
DEFAULT INPUT TEMPLATE:
–OS2–RODEO.ITF

INPUT 2
NAME: DAKSTATS RODEO
SOURCE TYPE: UDP/IP SOCKET
SOURCE: 20000
PROTOCOL: ENHANCED
SIZE: 4096
DEFAULT INPUT TEMPLATE:
–RODEO IN PROGRESS (SERIAL).ITF

DAKSTATS 3000 RODEO SETTINGS

INPUT FROM OMNI	OUTPUT TO V1500
TYPE: COM PORT	TYPE: UPD/IP
NAME: TIMER	NAME: RESULTS
PORT: COM X	UDP PORT: 20000
BAUD RATE: 19200	OUTPUT: BROADCAST
DATA BITS: 8	
PARITY: NONE	

MAIN PANNEL BOARD
BY CUSTOMER

MD
1

WIRELESS
PHOTOCELL RECEIVER
WITH BATTERY

0A–1056–0156 12'
PUSH BUTTON. **UP TO**
3 AVAILABLE

@3 TYPICAL

3 PIN XLR

J35

TIMER #1
TIMER #2
TIMER #3

J6

0A–1240–0033
RODEO
INTERFACE

WIRELESS JUDGES CONSOLE
0A–1110–0033
RODEO INSERT: LL–2608

CABLE TO IN–HOUSE
AUDIO
0A–1163–0032

W–1823 (30')

0A–1110–0030
CAN BASE STATION.
FUNCT. = 1

PROGRAMS ON COMPUTER:

–VENUS 7000
–DAKSTATS RODEO (0A–1149–4299)
–MICROSOFT NETWORK LOOPBACK ADAPTER

OPTIONAL EQUIPMENT
DEDICATED DAKSTATS COMPUTER
–DAKSTATS RODEO (0A–1149–4299)

10 BASE T
HUB

MONITOR
DAKSTATSRODEO
PRIMARY
NETWORK
COM1

MONITOR
V7000
PRIMARY
NETWORK

P0
P1
P2
P3

SIGNAL CONVERTER
WITH FIBER,
0A–1065–0174

J13 POWER
J15 FAR
J14 NEAR
J12 START
J11 FAR
J10 NEAR
J9–S–SWITCH
J8–M–SWITCH
J7–S–INPUT
J6–RESULTS
J5–RTD
J4–E–PORT
J3–SCBD
J2–SCBD

OMNISPORT
2000

0A–1240–0040

NOTE: WHEN USING SINGLE COMPUTER SETUP CONNECT FROM J6 OF OMNISPORT TO V7000/DAKSTATS COMPUTER.

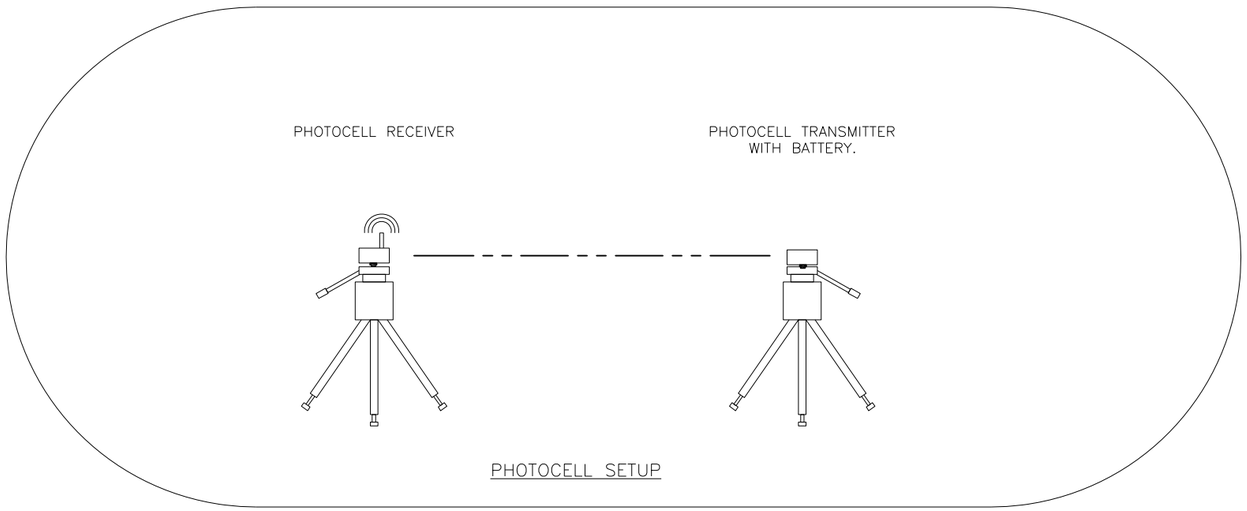
NOTE: WHEN USING OPTIONAL DEDICATED DAKSTATS COMPUTER CONNECT FROM J6 OF OMNISPORT TO DAKSTATS COMPUTER.

REV.	DATE	DESCRIPTION	BY	APPR.
02	18 AUG 09	ADDED NOTES FOR SYSTEM SETTINGS	RRS	
01	28DEC07	ADDED OPTIONAL DAKSTATS COMPUTER AND NETWORK HUB	MC	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: RODEO
TITLE: SYSTEM RISER– RODEO– PRO STAR
DES. BY: DRAWN BY: AGORDER DATE: 19 SEP 07
REVISION 01 APPR. BY:
SCALE: NONE

1163-R01B-320179



PHOTOCELL SETUP

GALAXY
OR
GALAXY PRO

RTD
TB1 PIN 2 CL+
TB1 PIN 6 CL–

W–1234

MAIN PANNEL BOARD
BY CUSTOMER

MD
1

DAKSTATS 3000 RODEO SETTINGS

INPUT FROM OMNI	OUTPUT TO V1500
TYPE: COM PORT	TYPE: UPD/IP
NAME: TIMER	NAME: RESULTS
PORT: COM X	UDP PORT: 20000
BAUD RATE: 19200	OUTPUT: BROADCAST
DATA BITS: 8	
PARITY: NONE	

V1500 REALTIME SETTINGS
PORT 2
TYPE: UDP PORT
PORT: 20000
OUTPUT: BROADCAST
ITF: RODEO IN PROGRESS (SERIAL).ITF

WIRELESS
PHOTOCELL RECEIVER
WITH BATTERY

0A–1056–0156 12'
PUSH BUTTON, **UP TO**
3 AVAILABLE

TIMER #1
TIMER #2
TIMER #3
J35
J6

3 PIN XLR

CABLE TO IN–HOUSE
AUDIO
0A–1163–0032

0A–1240–0033
RODEO
INTERFACE

W–1384

W–1823 (30')

0A–1110–0030
CAN BASE STATION.
FUNCT. = 1

@3 TYPICAL

WIRELESS JUDGES CONSOLE
0A–1110–0033
RODEO INSERT: LL–2608

0A–1091–0227
1/4" PHONO PLUG J–BOX
(OUTDOOR USE)

W–1267 (10')

0A–1240–0032

0A–1147–0011
SOFTWARE KEY
VENUS 1500 REAL TIME

J13 POWER
J15 FAR
J14 NEAR
J12 START
J11 FAR
J10 NEAR
J9–S–SWITCH
J8–M–SWITCH
J7–S–INPUT
J6–RESULTS
J5–RTD
J4–E–PORT
J3–SCBD
J2–SCBD

OMNISPORT
2000

0A–1240–0040

USB
USB
NETWORK
LAPTOP COMPUTER

W–1547 (20')

J–BOX

0A–1177–1029
OUTDOOR 2"X4" RJ45
J–BOX

USB TO COM
PORT ADAPTER
A–1801

PROGRAMS ON LAPTOP:

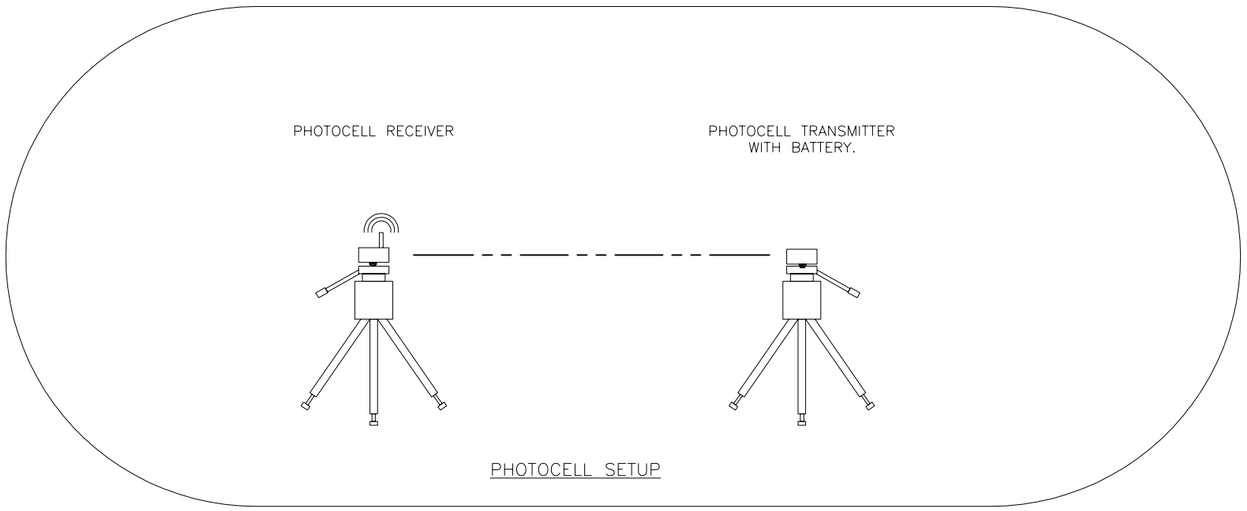
–VENUS 1500
–VENUS 1500 REAL TIME
–DAKSTATS RODEO (0A–1149–4299)
–MICROSOFT NETWORK LOOPBACK ADAPTER

REV.	DATE	DESCRIPTION	BY	APPR.
01	17 AUG 09	SWITCEHD J–BOX TO 'OUTDOOR USE' AND CHANGED PART NUMBER	RRS	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: RODEO
TITLE: RISER DIAGRAM: WIRED RODEO
DES. BY: MCRAVEN DRAWN BY: MCRAVEN DATE: 27 NOV 07
REVISION 01 APPR. BY:
SCALE: NONE

1163-R01B-326247



PHOTOCELL SETUP

GALAXY
OR
GALAXY PRO

ETHERNET BRIDGE
RADIO
0A-1382-0100

MAIN PANNEL BOARD
BY CUSTOMER

MD
1

DAKSTATS 3000 RODEO SETTINGS

INPUT FROM OMNI/DCS	OUTPUT TO V1500
TYPE: UDP/IP	TYPE: UPD/IP
NAME: TIMER	NAME: RESULTS
PORT: 3002	UDP PORT: 20000
OUTPUT: BROADCAST	OUTPUT: BROADCAST

V1500 REALTIME SETTINGS

PORT 2
TYPE: UDP PORT
PORT: 20000
OUTPUT: BROADCAST
ITF: RODEO IN PROGRESS (SERIAL).ITF

DAKTRONICS COMMUNICATIONS SERVER SETTINGS

INPUT FROM OMNI	OUTPUT TO DAKSTATS/GALAXY
NAME: TIMER	NAME: RESULTS
TYPE: SERIAL PORT	TYPE: UDP/IP SOCKET
PORT: COM X	PORT: 3002
BAUD: 19200	OUTPUT: BROADCAST
DATA BITS: 8	ITF: OS2-RODEO.ITF
PARITY: NONE	
ITF: OS2-RODEO.ITF	

WIRELESS
PHOTOCELL RECEIVER
WITH BATTERY

0A-1056-0156 12'
PUSH BUTTON. **UP TO 3 AVAILABLE**

TIMER #1
TIMER #2
TIMER #3
J35
J6
3 PIN XLR

CABLE TO IN-HOUSE
AUDIO
0A-1163-0032

0A-1240-0033
RODEO
INTERFACE

W-1823 (30')

0A-1110-0030
CAN BASE STATION.
FUNCT. = 1

@3 TYPICAL

WIRELESS JUDGES CONSOLE
0A-1110-0033
RODEO INSERT: LL-2608

ETHERNET BRIDGE
RADIO
0A-1382-0100

W-1343, 10'

0A-1147-0011
SOFTWARE KEY
VENUS 1500 REAL TIME

24V DC POWER SUPPLY
WITH Y ADAPTER ARE
PART OF ETHERNET RADIO

IN OUT
24V

J13 POWER
J15 FAR
J14 NEAR
J12 START
J11 FAR
J10 NEAR
J9-S-SWITCH
J8-M-SWITCH
J7-S-INPUT
J6-RESULTS
J5-RTD
J4-E-PORT
J3-SCBD
J2-SCBD

OMNISPORT
2000

0A-1240-0040

USB TO COM
PORT ADAPTER
A-1801

USB
USB
NETWORK
LAPTOP COMPUTER

PROGRAMS ON LAPTOP:

-VENUS 1500
-VENUS 1500 REAL TIME
-DAKSTATS RODEO (0A-1149-4299)
-MICROSOFT NETWORK LOOPBACK ADAPTER
-DAKTRONICS COMMUNICATIONS SERVER

REV.	DATE	DESCRIPTION	BY	APPR.
01	21DEC2007	CHANGED DCS ITF FILES FROM RODEO IN PROGRESS TO OS2-RODEO	MJC	

DAKTRONICS, INC. BROOKINGS, SD 57006

PROJ: RODEO
TITLE: RISER DIAGRAM; WIRELESS RODEO
DES. BY: MCRAVEN DRAWN BY: MCRAVEN DATE: 27 NOV 07
REVISION 00 APPR. BY:
SCALE: NONE

1163-R01B-326248

Appendix B: DakStats Rodeo Display Profile Tables

The DakStats® 3000 Rodeo Results Default Display Profile

The DakStats® 3000 Rodeo software uses function keys to send and select which data will be displayed by Daktronics display controllers. The software allows the user to edit and create different display profiles. All of the examples below are using the default display profile.

In order for the display controller to match up data with the correct template, the RTD sequence MUST be created with exactly 32 frames in a precise order. A good example of the integration of this software with the display controller is a Barrel Racing event:

1. The operator would press **[F7]** to display the current Go Round Leader and current competitor. Since the results software knows that a new contestant was selected, it sends the correct data and a select frame command for frame 18. Frame 18 has the time field for the current contestant configured for the Timer RTD input.
2. As soon as the ride is complete and the software sees the final time from the timer, it automatically sends the new data and sends a select frame command for frame 19. Now the display is showing the official time from the Results software RTD input.

Depending on the current event, pressing a function key will display different information. The following tables summarize the default function key settings for each event found in the DakStats 3000 Rodeo software. This document is meant as a reference while creating RTD sequences.

Bareback

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Run Time	Yes	Yes	Yes	20	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Score	Yes	Yes	Yes	17	
F7	Current Go Round	Yes	Yes	Yes	20	
F8	Current Average	Yes	Yes	Yes	24	
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Saddle Bronc

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Run Time	Yes	Yes	Yes	20	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Score	Yes	Yes	Yes	17	
F7	Current Go Round	Yes	Yes	Yes	20	
F8	Current Average	Yes	Yes	Yes	24	
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Bull Riding

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Run Time	Yes	Yes	Yes	20	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Score	Yes	Yes	Yes	17	
F7	Current Go Round	Yes	Yes	Yes	20	
F8	Current Average	Yes	Yes	Yes	24	
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Bull Fighting

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Run Time	Yes	Yes	Yes	20	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Score	Yes	Yes	Yes	17	
F7	Current Go Round	Yes	Yes	Yes	20	
F8	Current Average	Yes	Yes	Yes	24	
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Goat Tying

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	22	21
F8	Current Average	Yes	No	Yes	24	23
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Team Roping

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	16	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	28	27
F8	Current Average	Yes	No	Yes	30	29
F9	Go Round Leaders	No	No	No	31	
F10	Average Leaders	No	No	No	32	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Team Penning

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	16	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	28	27
F8	Current Average	Yes	No	Yes	30	29
F9	Go Round Leaders	No	No	No	31	
F10	Average Leaders	No	No	No	32	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Break Away

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	22	21
F8	Current Average	Yes	No	Yes	24	23
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Steer Wrestling

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	22	21
F8	Current Average	Yes	No	Yes	24	23
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Tie Down Roping

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	22	21
F8	Current Average	Yes	No	Yes	24	23
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Barrel Racing

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	22	21
F8	Current Average	Yes	No	Yes	24	23
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Steer Roping

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	22	21
F8	Current Average	Yes	No	Yes	24	23
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Custom Score Event

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Run Time	Yes	Yes	Yes	20	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Score	Yes	Yes	Yes	17	
F7	Current Go Round	Yes	Yes	Yes	20	
F8	Current Average	Yes	Yes	Yes	24	
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

Custom Time Event

Function Key	Description	Update Display	Update Manually	Update Announcer	Frame # of Result Updating	Frame # of Timer Updating
F2	Logo	No	No	No	2	
F3	Announcer	No	No	Yes		
F4	Event Text	No	No	No	14	
F5	Current Profile	Yes	No	Yes	15	
F6	Current Time	Yes	No	Yes	19	18
F7	Current Go Round	Yes	No	Yes	22	21
F8	Current Average	Yes	No	Yes	24	23
F9	Go Round Leaders	No	No	No	25	
F10	Average Leaders	No	No	No	26	
F11	Page Backward	No	No	No		
F12	Page Forward	No	No	No		

The following list is a summary of the 32 frames and their function. All data is coming from the results RTD input except where *running time* noted, that comes from the timer RTD input.

Frame #	Description
1	Blank
2	Sponsor Logo
3	Tie Down Roping Logo
4	Steer Wrestling Logo
5	Team Roping Logo
6	Barrel Racing Logo
7	Bareback Riding Logo
8	Saddle Bronc Riding Logo
9	Bull Riding Logo
10	Steer Roping Logo
11	Bull Fighting Logo
12	Break Away Roping Logo
13	Goat Tying Logo
14	Rodeo Display Information (rodeo name, location, and date)
15	Current Contestant Information (name, hometown, earnings, and others)
16	Current Team Information (name, hometown of the header and the healer)
17	Current Contestant and their score. (Individual scored event)
18	Current Contestant with *running time*. (Individual timed event)
19	Current Contestant with time. (Individual timed event)
20	Go Round Leader with score and Current Contestant with *running time* and score. (Individual scored event)
21	Go Round Leader with time and Current Contestant with *running time*. (Individual timed event)
22	Go Round Leader with time and Current Contestant with time. (Individual timed event)
23	Avg Leader with time and Current Contestant with need-for-lead and *running time*. (Individual timed event)
24	Avg Leader with time and Current Contestant with need-for-lead and time. (Individual timed event)
25	Go-round Leader Board for Individual Events.
26	Average Leader Board for Individual Events.
27	Go Round Leader with time and Current Team with *running time*. (Team timed event)
28	Go Round Leader with time and Current Team with time. (Team timed event)
29	Avg Leader with time and Current Team with need-for-lead and *running time*. (Team timed event)
30	Avg Leader with time and Current Team with need-for-lead and time. (Team timed event)
31	Go-round Leader Board for Team Events.
32	Average Leader Board for Team Events.