

Track & Field Interfaces

Setup Guide

ED-14511

Rev 9– 13 April 2012

DAKTRONICS

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DAKTRONICS, INC.

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Section 1: Introduction

This manual explains the settings required to send data to a Daktronics system from third-party FinishLynx™ timing software and Hy-Tek Meet Manager® results software.

For other questions concerning this system, refer to the telephone numbers listed in *Section 4*.

1.1 Resources

Figure 1 illustrates a Daktronics drawing label. The drawing number is located in the lower-right corner of a drawing. This manual refers to drawings by listing the last set of digits and the letter preceding them. In the example, the drawing would be referred to as *Drawing C-325405*.

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DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: DAKTRONICS UNIVERSITY			
TITLE: SYSTEM RISER DIAGRAM			
DES. BY: AORMESH		DRAWN BY: AORMESH	
		DATE: 15 JAN 08	
REVISION	APPR BY-	14963-R01C-325405	
00	SCALE- NONE		

Drawing Number

Figure 1: Daktronics Drawing Label

Reference Drawing:

System Riser Diagram **Drawing C-325405**

Daktronics identifies manuals by the DD or ED number located on the cover page of each manual. For example, this manual would be referred to as *ED-14511*.

1.2 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.
<i>Italics</i>	Indicates onscreen text or labels that are not clickable.
<i>Bold Italics</i>	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).

Section 2: FinishLynx Photo Finish System

The FinishLynx™ Timing System consists of a personal computer, FinishLynx software, and a photo finish camera. The FinishLynx system records fully automatic timing (FAT) times. Lynx Systems Developers Incorporated offers software and equipment to time races on the track, as well as different equipment to score events in the field.

2.1 Connection Methods

There are seven methods for connecting a FinishLynx photo finish system to different types of Daktronics equipment:

- FinishLynx to an All Sport® controller with a football scoreboard
- FinishLynx to a signal converter to a lane/place/time scoreboard
- FinishLynx to a DMP-7000 (Venus® 7000) or V-Play® controller via serial COM port(s)
- FinishLynx to a DMP-7000 (Venus 7000) or V-Play controller via network UDP/IP socket(s)
- FinishLynx to a six-digit clock or TR-3101
- FinishLynx to a Galaxy with M2 or newer controller via a serial com port and signal converter
- FinishLynx to a Galaxy with M2 or newer controller via a network UDP/IP socket

To access the connection settings on the FinishLynx computer, go to **Scoreboard > Options** (Figure 2).

Click on the **Options** tab (Figure 3). If the *Scoreboard Status* is empty, then the scoreboard script is not enabled.

To enable a scoreboard script:

1. Click **New** and then **OK**.
2. Restart the FinishLynx software to load the scoreboard script.

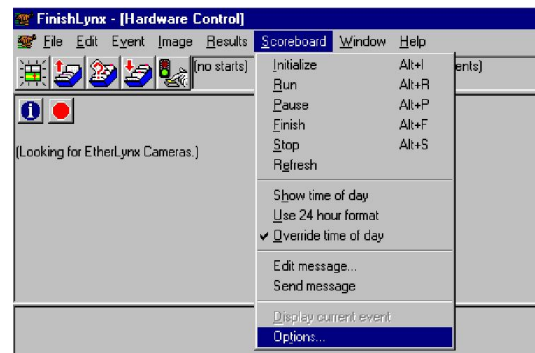


Figure 2: FinishLynx Options

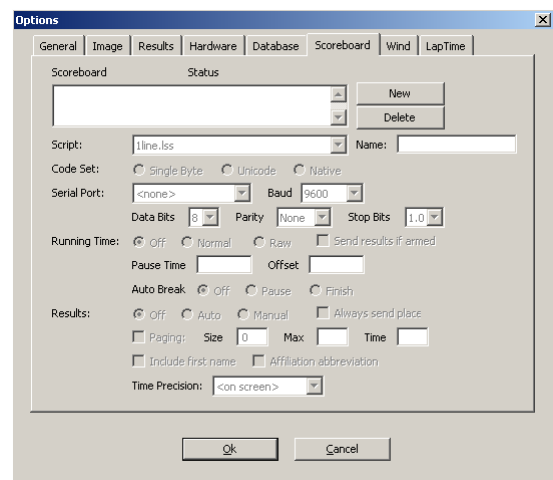


Figure 3: Scoreboard Tab

2.2 All Sport 4000 or 5000 Console Setup for Football Scoreboard

Reference Drawings:

Track/Football SCBD w/ FinishLynx & All Sport 5000	Drawing A-95152
Track/Football SCBD w/ FinishLynx, In Field	Drawing A-95153
Track/Football SCBD w/ FinishLynx, in Press Box	Drawing A-95154

For cabling of a FinishLynx to an All Sport 4000 or 5000 with the computer next to the All Sport in the press box, reference **Drawing A-95152**. Use **Drawing A-95153** when the FinishLynx controller is on the field and the All Sport controller is in the press box. Use **Drawing A-95154** for use with an All Sport 2600 and both of the previously mentioned applications.

Turn on the **All Sport** console and enter the proper code depending on the following setups.

If the FinishLynx computer has a built in 9-pin serial (COM) port, use code **8603** on the All Sport 5000. For an All Sport 4000, use codes **41, 42, or 43** depending on the scoreboard used (refer to *Appendix B* of the *All Sport 4000 Operations Manual, ED-9999*).

Set up the scoreboard options on the FinishLynx computer as follows (refer also to *Figure 4*):

- Script: "AllSport.lss"
- Name: "Scoreboard"
- Code Set: **Single Byte**
- Serial Port: Select an available COM port.
- Baud: **12800**
- Data Bits: **8**
- Parity: **None**
- Stop Bits: **2.0**
- Running Time: **Normal**
- Auto Break: **Off**
- Results: **Auto**
- Paging enabled, Size "1", Time "3.0"

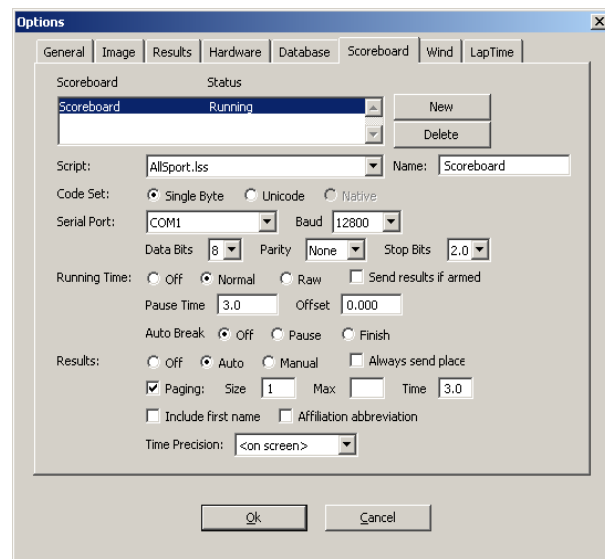


Figure 4: Scoreboard Settings for 9-pin COM port

If a USB-to-Serial adapter is being used on the FinishLynx computer, use code **8602** on the All Sport 5000. For an All Sport 4000, use codes **45, 46, or 47** depending on the scoreboard used (refer to *Appendix B* of the *All Sport 4000 operations manual, ED-9999*).

Set up the scoreboard options on the FinishLynx computer as follows (refer also to *Figure 5*):

- Script: "Powertime.lss"
- Name: "Scoreboard"
- Code Set: **Single Byte**
- Serial Port: Select an available COM port.
- Baud: **9600**
- Data Bits: **7**
- Parity: **Even**
- Stop Bits: **1.0**
- Running Time: **Normal**
- Auto Break: **Off**
- Results: **Auto**, **Always send place** enabled
- Paging enabled, Size "1", Time "5.0"

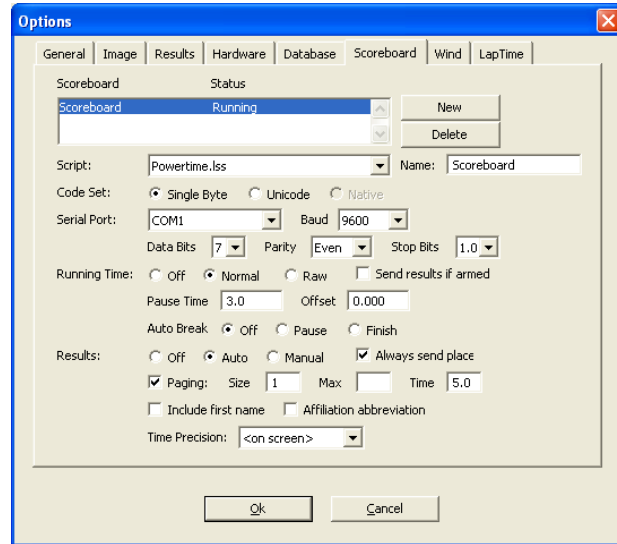


Figure 5: Scoreboard Options for USB-to-Serial Adapter

2.3 Signal Converter Setup for a Lane/Place/Time Scoreboard

Reference Drawings:

Track SCBD w/ FinishLynx, in Press Box **Drawing A-104300**

For scoreboard installation, address plug, and protocol plug settings, refer to the *LED Aquatic/Track Displays SW-2000 Series Display Manual (ED-12156)*.

Set the address plugs and protocol plugs according to the FinishLynx scoreboard settings in *Section 3* of *ED-12156*. The cabling should go according to **Drawing A-104300**.

Set up the scoreboard options on the FinishLynx computer as follows (also refer to *Figure 6*):

- Script: "Omni1000place.lss"
- Name: "Scoreboard"
- Code Set: **Single Byte**
- Serial Port: Select an available COM port.

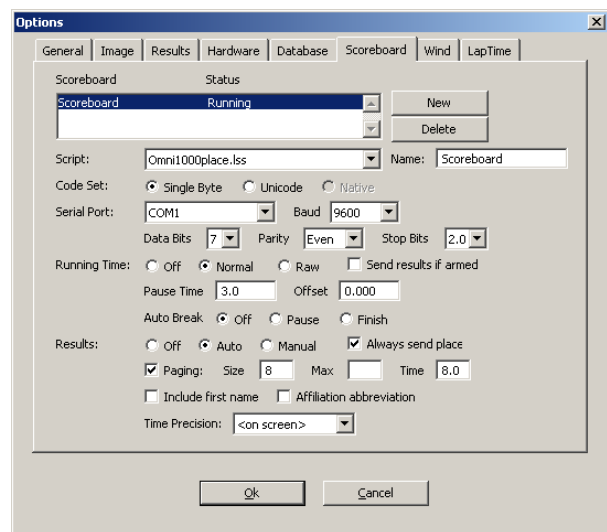


Figure 6: Scoreboard Options for Lane/Place/Time

- *Baud:* **9600**
- *Data Bits:* **7**
- *Parity:* **Even**
- *Stop Bits:* **2.0**
- *Running Time:* **Normal**
- *Auto Break:* **Off**
- *Results:* **Auto, Always send place** enabled
- *Paging* enabled; set the *Size* to the number of lanes that can be displayed on the scoreboard (ex, 4 for a four line scoreboard).

2.4 DMP-7000 (Venus 7000) or V-Play Controller Setup Via Serial

Reference Drawings:

System Riser: F.Lynx/Hytek/Venus Via Comm Ports **Drawing B-127739**

In this setup, RTD (Real Time Data) is sent from the FinishLynx system to the DMP-7000 (Venus 7000) or V-Play controller via serial port. The cabling should go according to **Drawing B-127739**.

If an All Sport 5000 is used, enter code **8604**.

Set up the scoreboard options on the FinishLynx computer as follows (refer also to *Figure 7*):

- *Script:* "Dak.lss"
- *Name:* "Scoreboard"
- *Code Set:* **Single Byte**
- *Serial Port:* Select an available COM port.
- *Baud:* **9600**
- *Data Bits:* **8**
- *Parity:* **None**
- *Stop Bits:* **1.0**
- *Running Time:* **Normal**
- *Auto Break:* **Off**
- *Results:* **Auto, Always send place** enabled
- *Paging* enabled; set the *Size* to the number of lanes that can be displayed on the matrix display; *Time* "3.0"

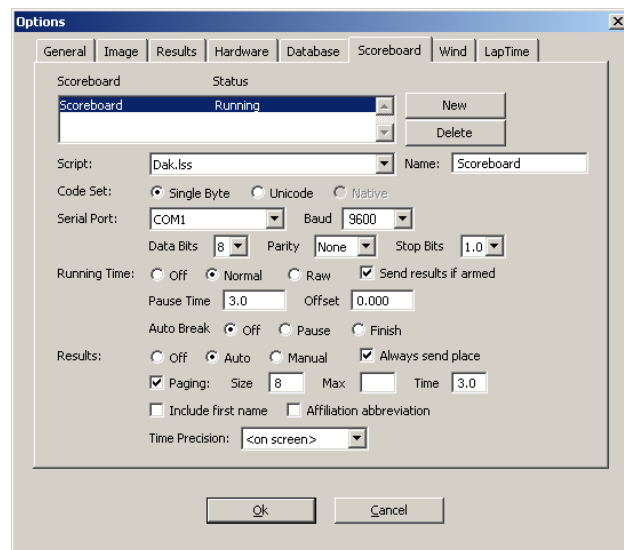


Figure 7: Scoreboard Options for Venus/V-Play Via Serial

2.5 DMP-7000 (Venus 7000) or V-Play Controller Setup Via Network UDP/IP

Reference Drawings:

System Riser: Finish Lynx/Hytek/Venus Via Network.....**Drawing B-267013**
Riser; Hytek/Lynx/V7000, Fiber, SCBD**Drawing B-267220**

In this setup, RTD (Real Time Data) is sent from the FinishLynx system to the DMP-7000 (Venus 7000) or V-Play controller over a network UDP/IP connection. Depending on the equipment used in a particular setup, refer to **Drawing B-267013** or **B-267220** for cabling configurations.

If an All Sport 5000 is used, enter code **8604**.

Set up the scoreboard options on the FinishLynx computer as follows:

Capture Station

Running Time (Figure 8)

- Script: "Dak.lss"
- Name: "Running Time"
- Code Set: **Single Byte**
- Serial Port: **Network (UDP)**
- Port "21000"
- Running Time: **Normal**
- Auto Break: **Off**
- Results: **Off**

Results (Figure 9)

- Script: "Dak.lss"
- Name: "Results"
- Code Set: **Single Byte**
- Serial Port: **Network (UDP)**
- Port "21100"
- Running Time: **Off**
- Auto Break: **Off**
- Results: **Auto**
- Paging enabled; set the Size to the number of lanes that can be displayed on the matrix display; Time "5.0"

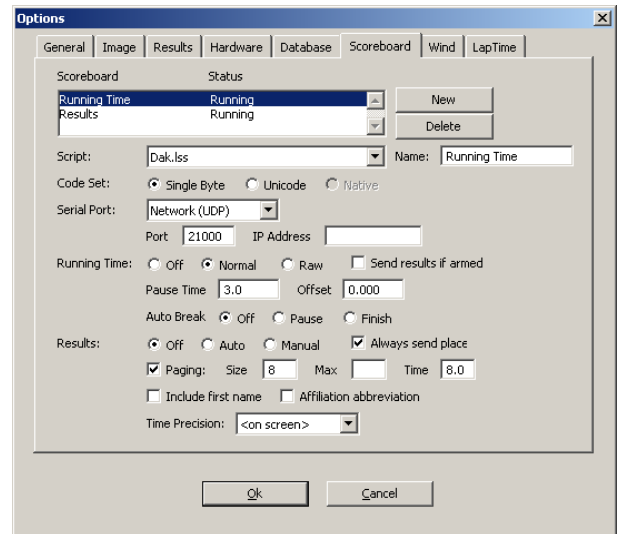


Figure 8: Running Time for Venus/V-Play Via UDP/IP

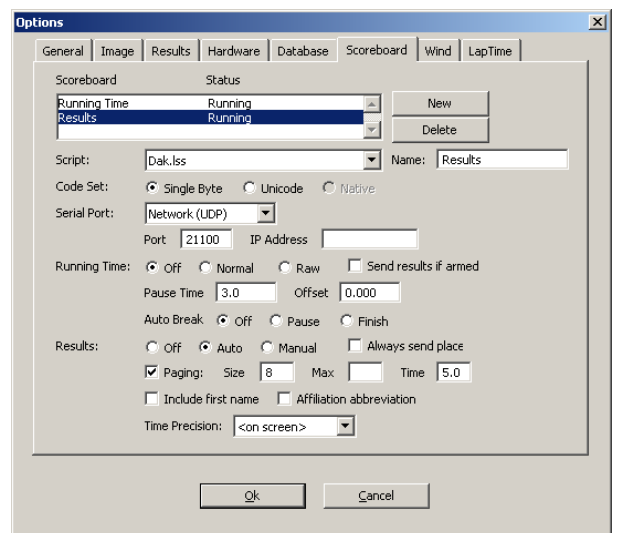


Figure 9: Results Options for Venus/V-Play Via UDP/IP

Edit Station

Set up the Edit Station options the FinishLynx computer as follows (refer also to *Figure 10*):

- Script: "Dak.lss"
- Name: "Results"
- Code Set: **Single Byte**
- Serial Port: **Network (UDP)**
- Port "22000"
- Running Time: **Off**
- Auto Break: **Off**
- Results: **Auto**
- Paging enabled; set the Size to the number of lanes that can be displayed on the matrix display; Time "5.0"

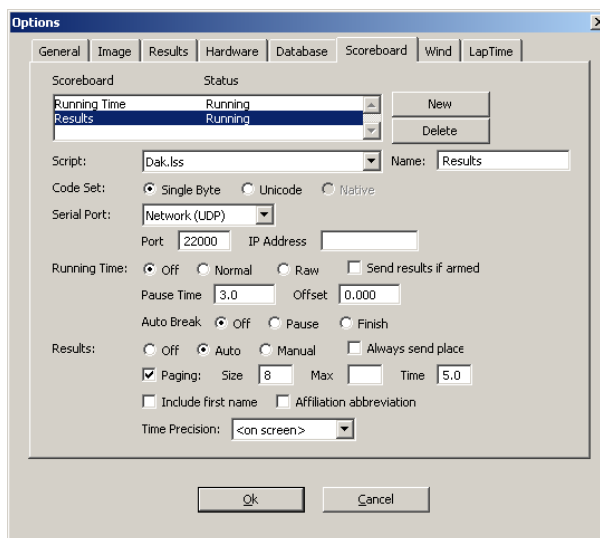


Figure 10: Edit Station Options for Venus/V-Play Via UDP/IP

2.6 Six or Seven-Digit Clock Setup

Reference Drawings:

TI-2020 or TI-2021 with FinishLynx **Drawing A-267638**

In this setup, the display typically sets on the infield near the finish. The display can be controlled via a serial port on the capture computer or the on the Lynx connection box.

1. Identify which serial port will control the display.
2. Connect the signal converter kit (part # 0A-1125-0007) to a serial port from FinishLynx to the input jack on the display. The cabling and configurations should go according to **Drawing A-267638**.
3. Set up the scoreboard options on the FinishLynx computer as follows (refer also to *Figure 11*):

- Script: "DakMDP.lss"
- Name: "Scoreboard"
- Code Set: **Single Byte**
- Serial Port: Select an available COM port.

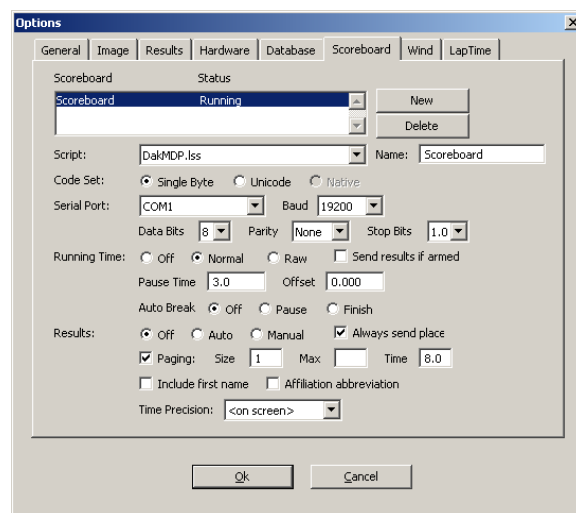


Figure 11: Scoreboard Options for 6 or 7-Digit Clock

Note: If connecting to the serial port on the connection box, select **Camera**.

- Baud: **9600**
- Data Bits: **8**
- Parity: **None**

- *Stop Bits: 1.0*
- *Running Time: Normal*
- *Auto Break: Off*
- *Results: Off*
- *Paging enabled; Size “1”; Time “8.0”*

2.7 TR-3101 Setup

1. Identify which serial port will control the display.
2. Connect the signal converter kit (part # 0A-1125-0007) to a serial port from FinishLynx to the input jack on the display.
3. Set up the scoreboard options on the FinishLynx computer as follows (refer also to *Figure 12*):

- *Script: “DakTR-3101.lss”*
- *Name: “Scoreboard”*
- *Code Set: Single Byte*
- *Serial Port: Select an available COM port.*

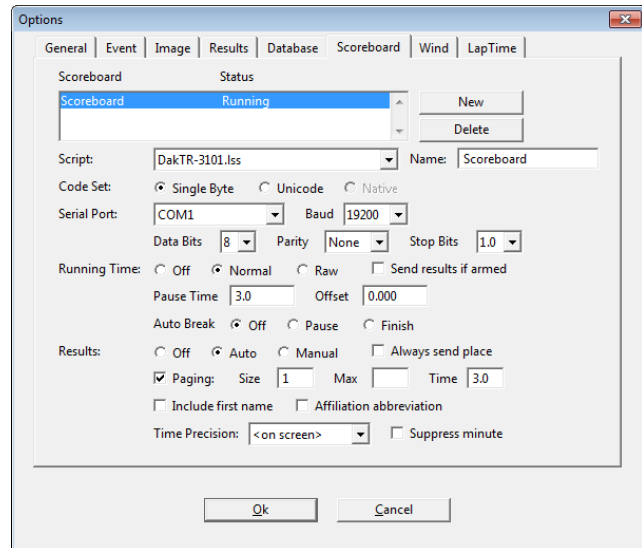


Figure 12: Scoreboard Options for TR-3101

Note: If connecting to the serial port on the connection box, select **Camera**.

- *Baud: 19200*
- *Data Bits: 8*
- *Parity: None*
- *Stop Bits: 1.0*
- *Running Time: Normal*
- *Auto Break: Off*
- *Results: Auto*
- *Paging enabled; Size “1”; Time “3.0”*

2.8 Galaxy Setup Via Serial Port and Signal Converter

Reference Drawing:

Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber..... **Drawing B-267688**

Using this setup, FinishLynx communicates directly to the display via serial port with a signal converter. The cabling and configurations should go according to **Drawing B-267688**.

Set up the scoreboard options on the FinishLynx computer as follows (refer also to *Figure 13*):

- *Script:* "Dak.lss"
- *Name:* "Scoreboard"
- *Code Set:* **Single Byte**
- *Serial Port:* Select an available COM port.
- *Baud:* **19200**
- *Data Bits:* **8**
- *Parity:* **None**
- *Stop Bits:* **1.0**
- *Running Time:* **Normal**
- *Auto Break:* **Off**
- *Results:* **Auto**
- *Paging* enabled; set the *Size* to the number of lanes that can be displayed on the matrix display; *Time* "8.0"

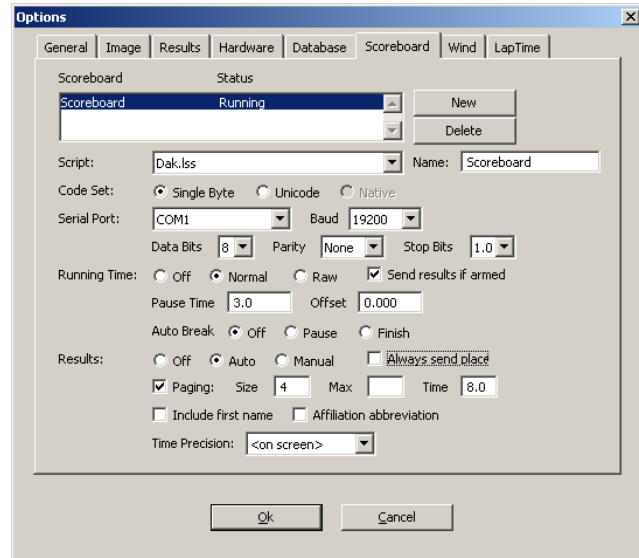


Figure 13: Scoreboard Options for Galaxy Via Serial

2.9 Galaxy Setup Via Network UDP/IP

Reference Drawings:

Riser; V1500/M2/M3/Galaxy, Lynx/Hytek, Ethernet **Drawing B-266821**
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber, SCBD..... **Drawing B-291376**
Riser; Hytek/Lynx/V1500, 2 M2/M3 Galaxy, Fiber, AS5000..... **Drawing B-298464**
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber, AS5000..... **Drawing B-298848**
Riser; Hytek/Lynx/Show Cntrl. M2/M3 Galaxy, EBR Radio..... **Drawing B-300928**
Riser; Hytek/Lynx/V1500, SSL, Fiber **Drawing B-973218**
Riser; Hytek/Lynx/V1500, Fiber, SCBD, SSL **Drawing B-973392**

Using this setup, FinishLynx communicates directly to the display via a network UDP/IP connection. Depending on the equipment used in a particular setup, refer to **Drawing B-266821, B-291376, B-298464, B-298848, B-300928, B-973218, or B-973392** for cabling configurations.

Set up the scoreboard options on the FinishLynx computer as follows (refer also to *Figure 14*):

- *Script:* "Dak.lss"
- *Name:* "Scoreboard"
- *Code Set:* **Single Byte**
- *Serial Port:* **Network (UDP)**
- *Port* "3002"
- *Running Time:* **Normal**
- *Auto Break:* **Off**
- *Results:* **Auto**
- *Paging* enabled; set the *Size* to the number of lanes that can be displayed on the matrix display; *Time* "8.0"

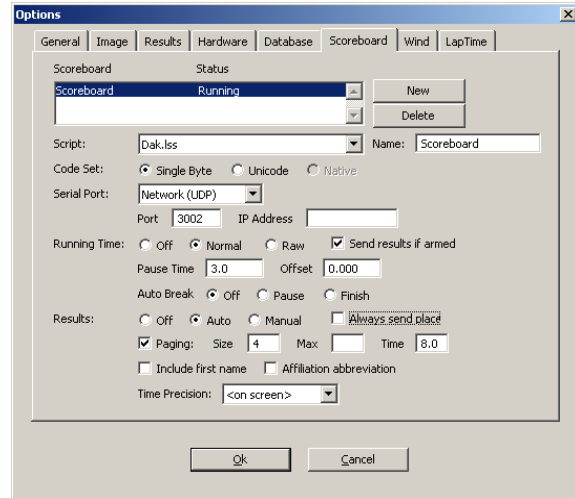


Figure 14: Scoreboard Options for Galaxy Via UDP/IP

2.10 Tips and Troubleshooting

- Is the correct code entered into the All Sport?
- Does the All Sport have the proper software revision? **>V1.5** for All Sport 4000, and **>V1.4** for All Sport 5000.
- Is the correct serial or network port selected? Cameras must be connected and operating for the running time to display.
- Save and close each race after finish of the race. Otherwise, the scoreboard will continue to display the race opened. The Lynx program will place an "S" to the left of the event the scoreboard is displaying.
- If results and running time are being received from the same COM port of the FinishLynx computer system, the FinishLynx system will transmit running time until [ALT + S] is pressed on the Lynx computer keyboard.
- On the FinishLynx computer, **COM1** is usually the capture button. If a button splitter cable is connected, the capture button uses pins **4, 7, and 8** of the serial port. The scoreboard uses pins **2, 3, and 5** of the serial port.
- If settings in the FinishLynx software are changed, exit out of the program and restart for the changes to take effect.
- If there are more lanes on the track than can be displayed on the scoreboard, **Paging** must be enabled, and the **Size** must be set to the number of lines the scoreboard can display. This will enable the computer to send the results for the first group lanes, and then the next group of lanes.

Section 3: Hy-Tek Track & Field Meet Manager

Hy-Tek Track & Field Meet Manager is a third-party results program. With its optional Alpha Scoreboard Interface, Hy-Tek can send start lists, results, and team scores in a standard RTD format for display on a Daktronics matrix display. If your Hy-Tek license does not include the Alpha Scoreboard Interface, contact Hy-Tek to purchase it.

For Daktronics use, the Alpha Scoreboard Interface has three options, described below:

- **Daktronics Full Matrix:** Requires that the display show at least 3 lines of 18 or more characters per line. For larger displays, the two main advantages of using this method versus Daktronics Fixed Digit is that it will show longer names and does not require unique frames for start lists, results, and team scores.
- **Daktronics Small Matrix:** Requires that the display show 3 lines of 10 or more characters per line.
- **Daktronics Fixed Digit:** Used when the operator wants to customize what will be shown on the display. The sequence requires five unique frames for start list, results, women's scores, men's scores, and awards in that order.

3.1 Daktronics Full Matrix Setup

Requires that the RTD sequence will show at least 3 lines of 16 or more characters per line.

1. Open the Meet Manager program.
2. Click **Run** on the main menu.
3. Go to **Interface > Setup > Scoreboard** (Figure 15).

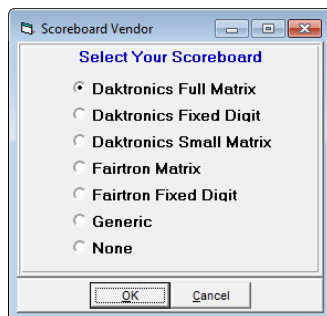


Figure 15: Scoreboard Vendor Selection

4. Select **Daktronics Full Matrix** and click OK.
5. Go to **Interfaces > Scoreboard - Daktronics Full Matrix > Open/Close Serial Port** (Figure 16).

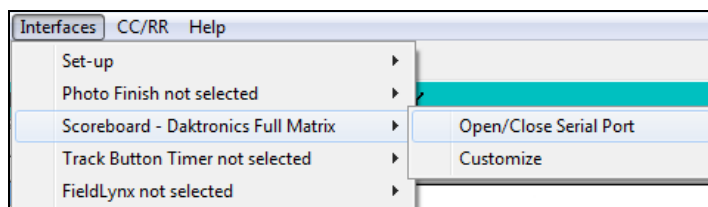


Figure 16: Open/Close Serial Port

- For the *Scoreboard (1-16)* option (*Figure 17*), select the COM port number on the Hy-Tek computer that will output Standard RTD, and then click **OK**.

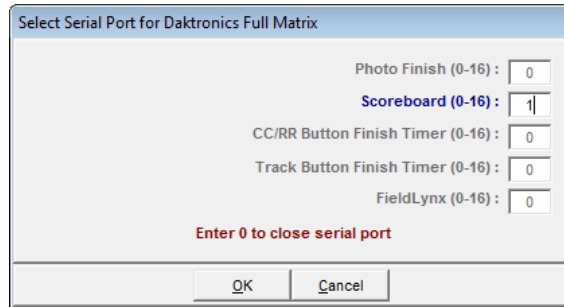


Figure 17: Serial Port for Daktronics Full Matrix

- Go to **Interfaces > Scoreboard – Daktronics Full Matrix > Customize** (*Figure 18*).

- Set the *Number of Bulbs Vertically (Rows)* to the appropriate value. Calculate by multiplying the number of lines in the sequence by 8. Example: $6 \times 8 = 48$.
- Set the *Number of Bulbs Horizontally (Columns)* to the appropriate value. Calculate by multiplying the number of characters per line in the sequence by 6. Example: $24 \times 6 = 144$.
- Set the *Number of Bulbs Between Lines* to “1”.

Note: Refer to the *Daktronics Fixed Width Font Calculator (DD2000695)* for an interactive spreadsheet that can help determine the above values.

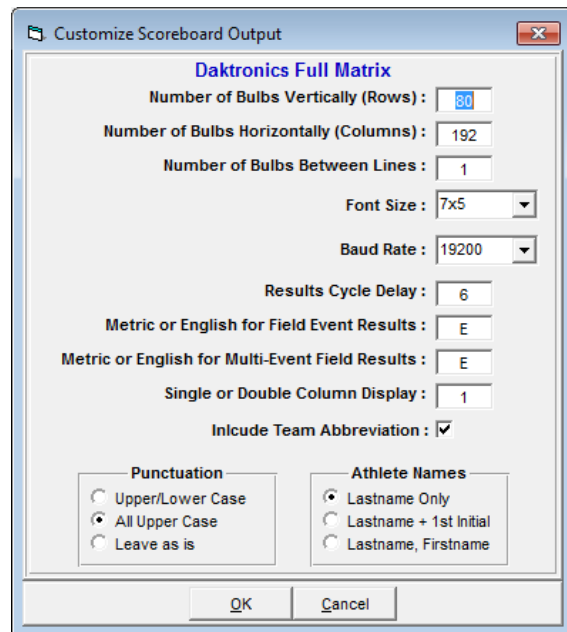


Figure 18: Customize Daktronics Full Matrix

- Set the *Font Size* to **7x5**.
- Set the *Baud Rate* to **19200**.
- All other settings are the user’s preference.

3.2 Daktronics Small Matrix Setup

Requires that the RTD sequence has 3 lines of 10 or more characters per line.

1. Open the Meet Manager program.
2. Click **Run** on the main menu.
3. Go to **Interface > Setup > Scoreboard** (*Figure 19*).

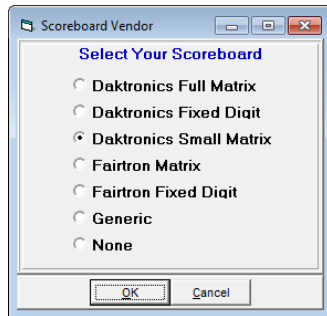


Figure 19: Scoreboard Vendor Selection

4. Select **Daktronics Small Matrix** and click **OK**.
5. Go to **Interfaces > Scoreboard - Daktronics Small Matrix > Open/Close Serial Port** (*Figure 20*).

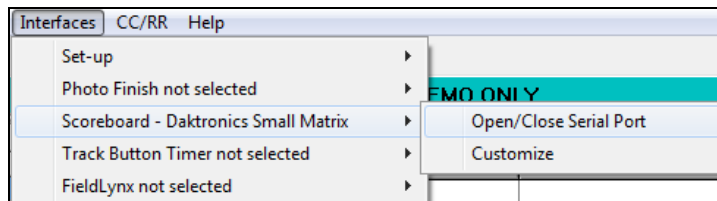


Figure 20: Open/Close Serial Port

6. For the *Scoreboard (1-16)* option (*Figure 21*), select the COM port number on the Hy-Tek computer that will output Standard RTD, and then click **OK**.

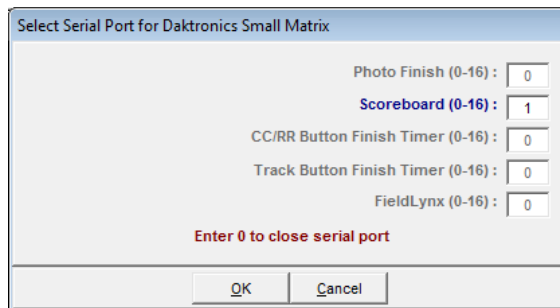


Figure 21: Serial Port for Daktronics Small Matrix

7. Go to **Interfaces > Scoreboard – Daktronics Small Matrix > Customize** (Figure 22).

- Set the *Number of Bulbs Vertically (Rows)* to “24”.
- Set the *Number of Bulbs Horizontally (Columns)* to the appropriate value. Calculate by multiplying the number of characters per line in the sequence by 6. Example: 16*6=96.
- Set the *Number of Bulbs Between Lines* to “1”.

Note: Refer to the *Daktronics Fixed Width Font Calculator (DD2000695)* for an interactive spreadsheet that can help determine the above values.

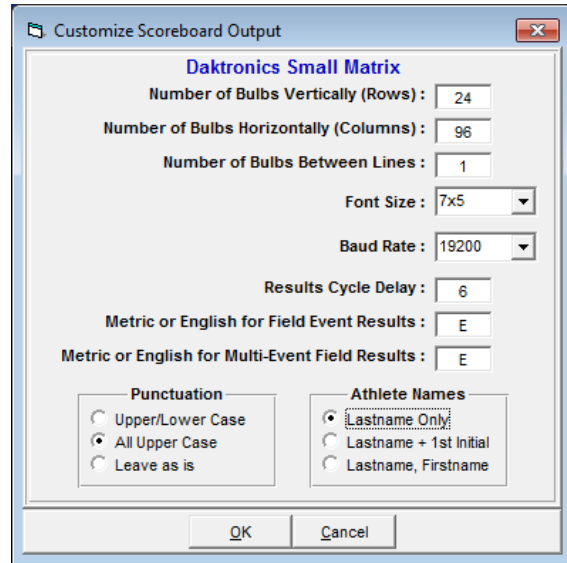


Figure 22: Customize Daktronics Small Matrix

- Set the *Font Size* to 7x5.
- Set the *Baud Rate* to 19200.
- All other settings are the user’s preference.

3.3 Daktronics Fixed Digit Setup

This setting is used when the operator wants to customize what will be shown on the display. The sequence requires five unique frames for Start List, Results, and Team Scores. Frame 1 is Start List, Frame 2 is Results, Frame 3 is Women’s Scores, Frame 4 is Men’s Scores, and Frame 5 is Awards. If using this choice with a Venus 7000, the sequence must be played in **Selected Frame Mode**.

1. Open the Meet Manager program.
2. Click **Run** on the main menu.
3. Go to **Interface > Setup > Scoreboard** (Figure 23).

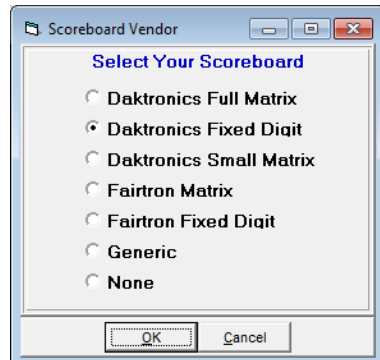


Figure 23: Scoreboard Vendor Selection

4. Select **Daktronics Fixed Digit** and click **OK**.

5. Go to **Interfaces > Scoreboard - Daktronics Fixed Digit > Open/Close Serial Port** (Figure 24).

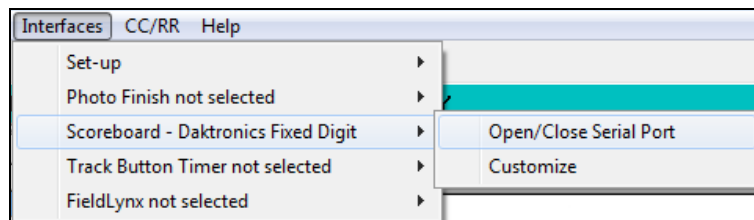


Figure 24: Open/Close Serial Port

6. For the *Scoreboard (1-16)* option (Figure 25), select the COM port number on the Hy-Tek computer that will output Standard RTD, and then click **OK**.

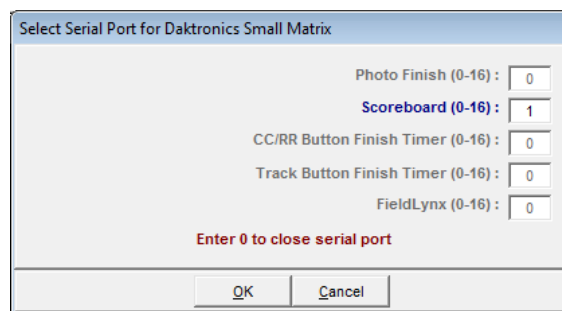


Figure 25: Serial Port for Daktronics Fixed Digit

7. Go to **Interfaces > Scoreboard - Daktronics Fixed Digit > Customize** (Figure 26).

- Set the *Number of Lanes on Board* to the number of competitors that will be shown on one frame of the sequence.
- Set the *Baud Rate* to **19200**.

Note: Some older systems using the Fixed Digit output were set to “9600” baud.

- All other settings are the user’s preference.

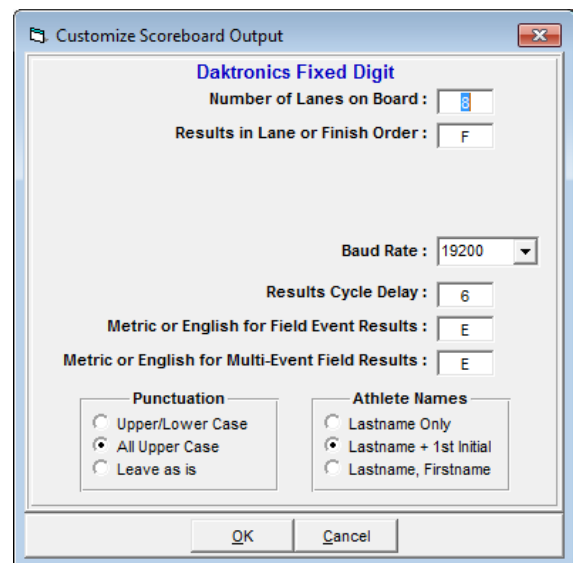


Figure 26: Customize Daktronics Fixed Digit

3.4 Sending Start Lists, Results, & Team Scores from Hy-Tek

There are two ways to get information from Hy-Tek. One way is to push the information from the Hy-Tek program. These instructions are listed below. There is also a request program that allows the Venus 7000 operator to pull information from Hy-Tek. For more information about this method, refer to the *Daktronics Venus 7000 Controller Track Setup Guide (ED-12636)*.

The usual method of operation from the Run Menu within the Hy-Tek software is as follows:

1. Get heat on screen and press [Ctrl] + [F10] to display start list.
2. Enter results for a heat, section, or flight.
3. Press [Ctrl] + [F11] to instantly display these results.
4. Press [F5] for next heat and repeat steps 1, 2, and 3.
5. After the results for the last heat, section, or flight are entered, press [Ctrl] + [F12] to display complete results for the entire round.

Any start list, result, or team score can be displayed at any time from the Run Menu by pressing [Ctrl] + [F1]. A selection box will appear as shown in *Figure 27*.

Request Choices

Start Lists and Results: Enter the desired *Round*, *Event Number*, and *Heat/Flight* and then enter a *Request* for a Start List ("1") or Results ("2"). Entering "99" for the *Heat/Flight* and "2" for *Request* will show complete results for the selected round and event.

Combined-events: To display a combined-event, also enter the *Multi-Event Sub-Event* number.

To display combined-event total scores for all sub-events, enter "99" for the *Heat/Flight* and "0" for *Multi-Event Sub-Event*.

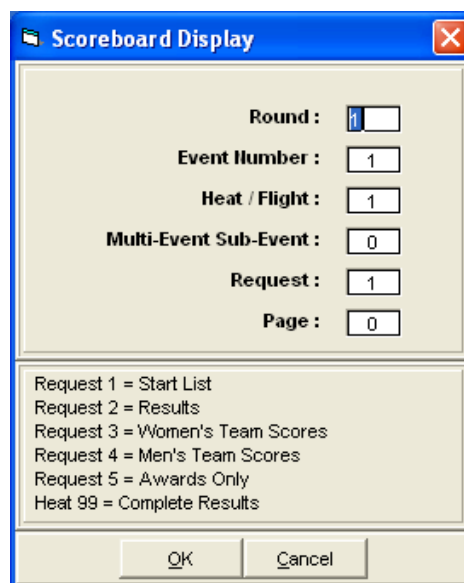


Figure 27: Scoreboard Display Requests

Team Scores: Use Request "3" and "4" for team scores. If there are separate team scores for divisions, enter the division number in the *Heat/Flight* number field. For example, when scoring class A (division 1) and class AA (division 2) in the same meet, enter *Request* "3" and *Heat/Flight* "2" to get girls team scores for the AA division and enter *Request* "4" and *Heat/Flight* "1" to get boys team scores for the A division. If an event is a Cross Country event, be sure to also include the *Event Number* so that the software will show the CC team scores.

Award Ceremonies: If there are award ceremonies, enter "5" for *Request* along with the *Event Number*, and the award winners will be displayed for the event based on what was put in the Hy-Tek Meet Set-up Part B for number getting awards. If the event is set up as multi-age group, the awards for each age group will be displayed on a rotational basis.

Paging: If a particular request has more than one screen full of information, the "pages" are cycled. A *Page* number of "0" means cycle all pages normally. To continually display a particular page, enter the specific *Page* number. This can be useful when an announcer is calling out the entrants in a larger event, such as the 16 person mile.

3.5 System Riser Diagrams

Refer to the drawings below for a particular type of display and display controller.

Venus 1500 Version 3.xx Controlled Displays

Reference Drawings:

Riser; V1500/M2/M3/Galaxy, Lynx/Hytek, Ethernet	Drawing B-266821
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber	Drawing B-267688
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber, SCBD	Drawing B-291376
Riser; Hytek/Lynx/V1500, 2 M2/M3 Galaxy, Fiber, AS5000	Drawing B-298464
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber, AS5000.	Drawing B-298848
Riser; Hytek/Lynx/Show Cntrl. M2/M3 Galaxy, EBR Radio	Drawing B-300928
Riser; Hytek/Lynx/V1500, SSL, Fiber	Drawing B-973218
Riser; Hytek/Lynx/V1500, Fiber, SCBD, SSL.....	Drawing B-973392

Show Control System w/ SS, SSL & AF-3500 Displays

Reference Drawings:

System Riser; Standard SC RTD, Track/ Finish-Lynx, M3/SSL	Drawing B-1019567
System Riser; Track M3 Matrix w/ Omni2K in Pressbox	Drawing B-1072146
System Riser; Standard SC RTD, Track, DVX	Drawing B-1068144

Show Control System w/ DVX Displays

Reference Drawings:

System Riser; Standard SC RTD, Track, DVX	Drawing B-1068144
---	-------------------

DMP-7000 (Venus 7000) or V-Play Controller

Reference Drawings:

System Riser: F.Lynx/Hytek/Venus Via Comm Ports	Drawing B-127739
System Riser: Finish Lynx/Hytek/Venus Via Network.....	Drawing B-267013
Riser; Hytek/Lynx/V7000, Fiber, SCBD	Drawing B-267220

Section 4: Additional Resources

4.1 Contact Information

Daktronics

Mail: Daktronics, Inc., Customer Service
201 Daktronics Drive
P.O. Box 5128
Brookings, SD 57006

Phone: Help Desk: 1-800-843-9879 or 1-605-697-4400

Customer Service Fax: 1-605-697-4444

Email: helpdesk@daktronics.com

Finish Lynx

Phone: 800-989-5969

Email: info@finishlynx.com

Website: www.finishlynx.com

Hy-Tek

Phone: 615-599-4364

Email: tfmm@hy-tek.com

Website: www.hy-tek.com

4.2 Daktronics Manuals

- *All Sport 4000 Series Control Console Operations Manual (ED-9999)**
- *All Sport 5000 Series Control Console Operations Manual (ED-11976)**
- *LED Aquatics/Track Displays SW-2000 Series Display Manual (ED-12156)**
- *Daktronics Venus 7000 Controller Track Setup Guide (ED-12636)**
- *V-Play Digital Audio/Video Server Operator's Manual (ED-13120)*
- *Venus 1500 Software Version 3 Operations Manual (ED-13530)**
- *Venus 7000 Controller Operators' Manual (ED-14551)*

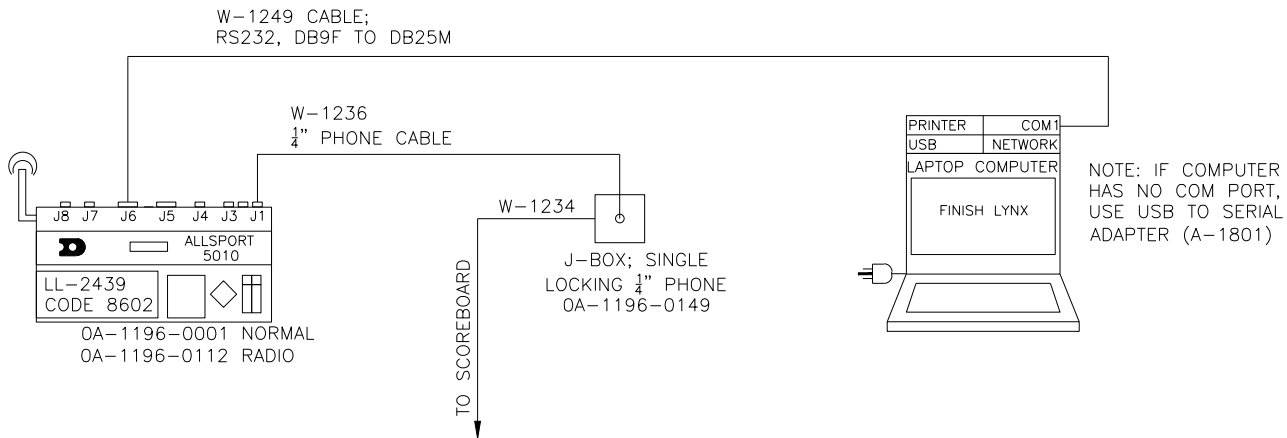
* Available online at www.daktronics.com/manuals.

Appendix A: Reference Drawings

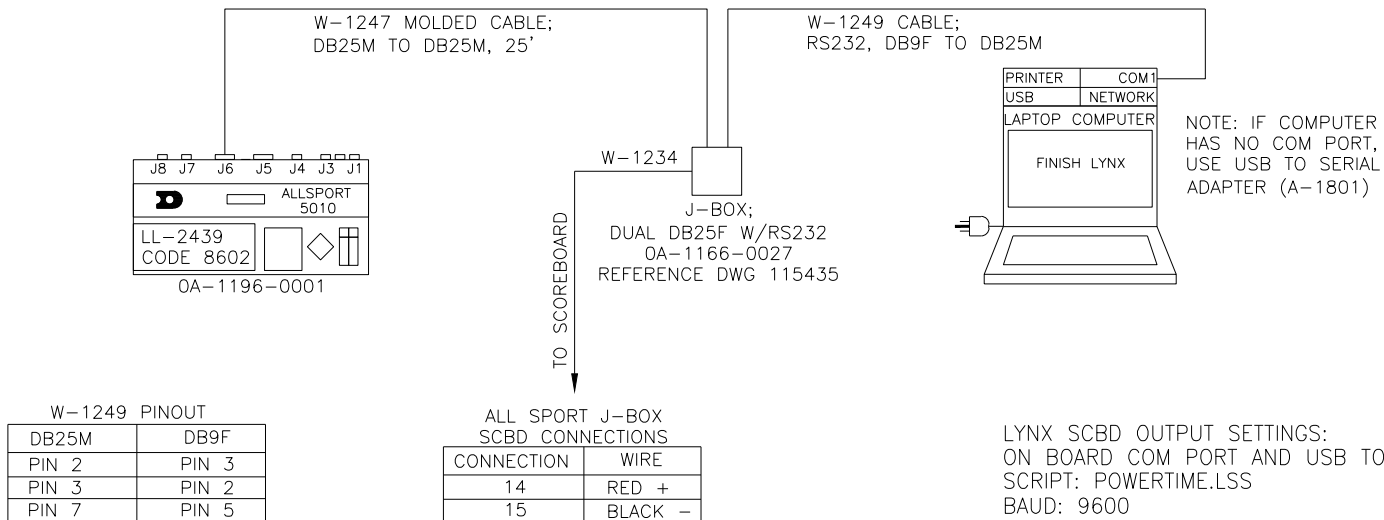
<i>Drawing Title</i>	<i>Drawing Number</i>
Track/Football SCBD w/ FinishLynx & All Sport 5000	A-95152
Track/Football SCBD w/ FinishLynx, In Field	A-95153
Track/Football SCBD w/ FinishLynx, in Press Box	A-95154
Track SCBD w/ FinishLynx, in Press Box	A-104300
System Riser: F.Lynx/Hytek/Venus Via Comm Ports	B-127739
System Riser: FB/Track SCBD w/ Omni2K– Track Side	A-186535
System Riser: Track SCBD w/ Omni 2K– Track Side.....	A-186548
Riser; V1500/M2/M3/Galaxy, Lynx/Hytek, Ethernet	B-266821
System Riser: Finish Lynx/Hytek/Venus Via Network	B-267013
Riser; Hytek/Lynx/V7000, Fiber, SCBD	B-267220
TI-2020 or TI-2021 w/ Finish Lynx	A-267638
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber	B-267688
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber, SCBD	B-291376
Riser; Hytek/Lynx/V1500, 2 M2/M3 Galaxy, Fiber, AS5000	B-298464
Riser; Hytek/Lynx/V1500, M2/M3 Galaxy, Fiber, AS5000.	B-298848
Riser; Hytek/Lynx/Show Cntrl. M2/M3 Galaxy, EBR Radio	B-300928
Riser; Hytek/Lynx/V1500, SSL, Fiber	B-973218
Riser; Hytek/Lynx/V1500, Fiber, SCBD, SSL	B-973392
System Riser; Standard SC RTD, Track/ Finish-Lynx, M3/SSL	B-1019567
System Riser; Standard SC RTD, Track, DVX	B-1068144
System Riser; Track M3 Matrix w/ Omni2K in Pressbox	B-1072146

TRACK/FOOTBALL SCBD WITH FINISH LYNX AND ALL SPORT 5000

RADIO OR 1/4" PHONE CONNECTION TO SCBD



DUAL 25 PIN J-BOX CONNECTION TO SCBD

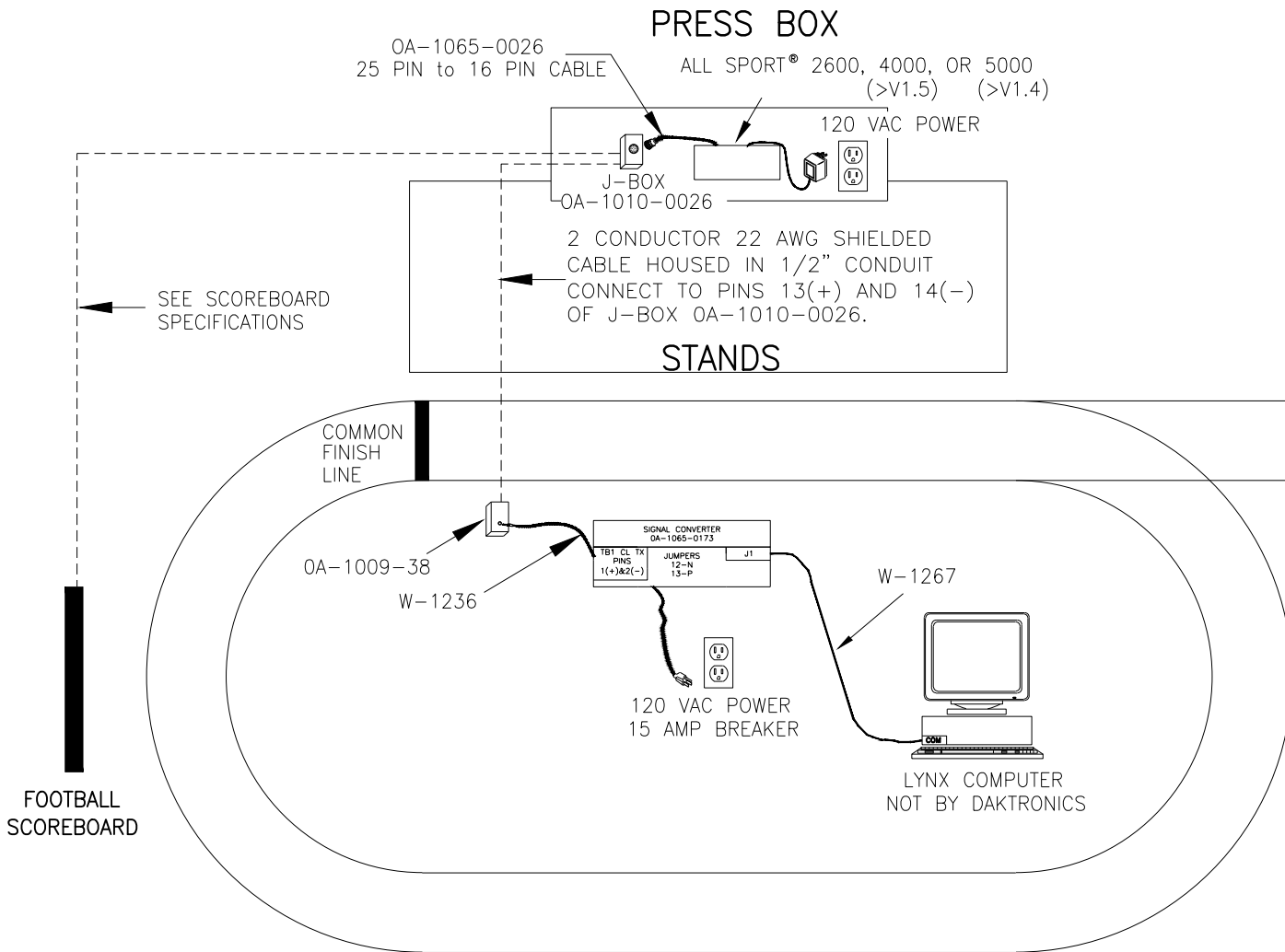


LYNX SCBD OUTPUT SETTINGS:
ON BOARD COM PORT AND USB TO SERIAL
SCRIPT: POWERTIME.LSS
BAUD: 9600
DATA BITS: 7
PARITY: EVEN
STOP BITS: 1
RUNNING TIME: NORMAL
RESULTS: ON
PAGE SIZE: 1
ALLSPORT CODE: 8602

REV 01	DATE: 15 SEP 98	ADDED LYNX SCBD OUTPUT SETTINGS	BY: CJB
REV 02	DATE: 05 SEP 01	CHANGED TEXT	BY: GWS
REV 03	DATE: 04 OCT 07	ADDED POWERTIME SCRIPT FOR WHEN USING USB TO 9 PIN ADAPTER	BY: SAL
REV 04	DATE: 23 NOV 10	UPDATED DRAWING TO BE MORE UNIVERSAL. USE ALL SPORT 5000, AND ONLY INCLUDE POWERTIME SCRIPT	BY: AMG

DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING			
THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.			
PROJ: TRACK SYSTEM RISER DIAGRAM OPTION #3 TITLE: TRACK/FOOTBALL SCBD W/ FINISH LYNX & ALL SPORT 5000 DESIGN: DRAWN: AGORDER SCALE: 1 = 1 SHEET 04 REV P1125 JOB NO: P-08-A DATE: 07-28-97 95152			

TRACK SYSTEM RISER DIAGRAM TRACK/FOOTBALL SCBD W/ FINISH LYNX



TYPICAL INTERFACE EQUIPMENT NEEDED:

QTY	
1	SIGNAL CONVERTER (OA-1065-0173)
1	J-BOX (OA-1009-0038)
1	CABLE (W-1236)
1	CABLE (W-1267)

LYNX SCBD OUTPUT SETTINGS:

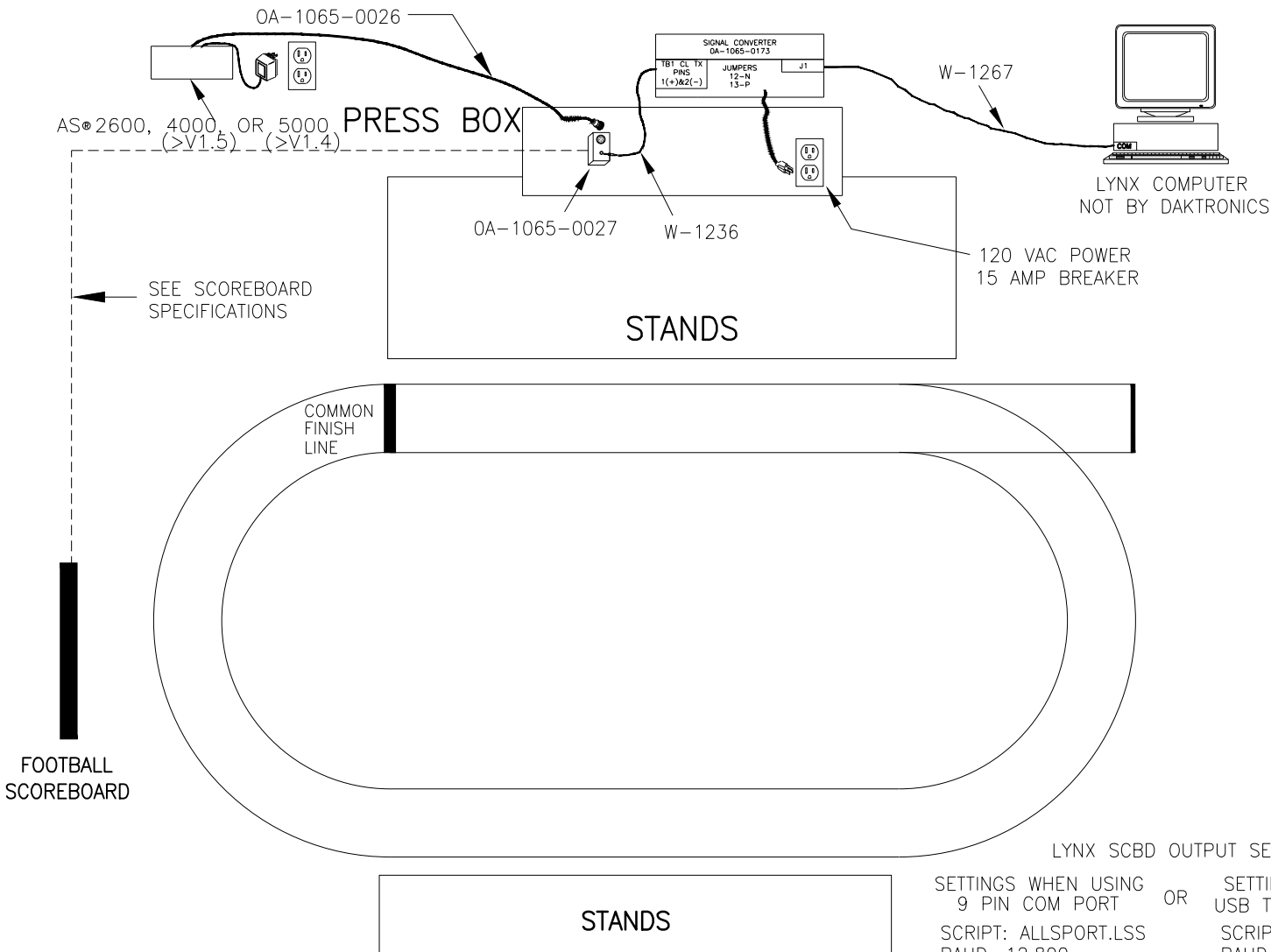
SETTINGS WHEN USING 9 PIN COM PORT	OR	SETTINGS WHEN USING USB TO 9 PIN ADAPTOR
SCRIPT: ALLSPORT.LSS		SCRIPT: POWERTIME.LSS
BAUD: 12,800		BAUD: 9600
DATA BITS: 8		DATA BITS: 7
PARITY: EVEN		PARITY: EVEN
STOP BITS: 2		STOP BITS: 1
RUNNING TIME: NORMAL		RUNNING TIME: NORMAL
RESULTS: ON		RESULTS: ON
PAGE SIZE: 1		PAGE SIZE: 1
ALLSPORT CODE: 8604		ALLSPORT CODE: 8602

REV	DATE:	UPDATED BORDER, TITLE BLOCK, REVISION BLOCKS	BY:	ACB
05	27 NOV 13			
REV	DATE:	ADDED POWERTIME SCRIPT WHEN USING A USB TO 9 PIN ADAPTOR CABLE	BY:	SAL
04	04 OCT 07			
REV	DATE:	CHANGED SIGNAL CONVERTER DRAWING TO SHOW JACK NUMBERS AND PINS.	BY:	LWS
03	15 SEP 03			
REV	DATE:	CHANGED SOME TEXT	BY:	GWS
02	05SEP01			
REV	DATE:	ADDED LYNX SCBD OUTPUT SETTINGS	BY:	CIB
01	15 SEP 98			

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DO NOT SCALE DRAWING		PROJ: TRACK SYSTEM RISER DIAGRAM OPTION #1	
TITLE: TRACK/FOOTBALL SCBD W/ FINISH LYNX-IN FIELD		DRAWN: JWHITAK	
DESIGN: SCALE: 1=1		DATE: 07-28-97	
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
05	P1125		P-08-A
95153			

TRACK SYSTEM RISER DIAGRAM

TRACK/FOOTBALL SCBD W/ FINISH LYNX



LYNX SCBD OUTPUT SETTINGS:

SETTINGS WHEN USING 9 PIN COM PORT	OR	SETTINGS WHEN USING USB TO 9 PIN ADAPTOR
SCRIPT: ALLSPORT.LSS		SCRIPT: POWERTIME.LSS
BAUD: 12,800		BAUD: 9600
DATA BITS: 8		DATA BITS: 7
PARITY: EVEN		PARITY: EVEN
STOP BITS: 2		STOP BITS: 1
RUNNING TIME: NORMAL		RUNNING TIME: NORMAL
RESULTS: ON		RESULTS: ON
PAGE SIZE: 1		PAGE SIZE: 1
ALLSPORT CODE: 8604		ALLSPORT CODE: 8602

TYPICAL INTERFACE EQUIPMENT NEEDED:

QTY	
1	SIGNAL CONVERTER (OA-1065-0173)
1	J-BOX (OA-1065-0027)
1	CABLE (W-1236)
1	CABLE (W-1267)

REV	DATE:	UPDATED BORDER, TITLE BLOCK, REVISION BLOCK	BY:	ACB
06	27 NOV 13			
REV	DATE:	ADDED POWERTIME SCRIPT FOR WHEN USING A USB TO 9 PIN ADAPTOR	BY:	SAL
05	04 OCT 07			
REV	DATE:	CHANGED SIGNAL CONVERTER DRAWING TO SHOW JACK NUMBERS AND PINS.	BY:	LWS
04	15 SEP 03			
REV	DATE:	ADDED AS 5000 OPTION	BY:	JDB
03	6 JUNE 01			
REV	DATE:	ADDED LYNX SCBD OUTPUT SETTINGS	BY:	CJB
02	15 SEP 98			
REV	DATE:	REVISED PART NUMBERS.	BY:	HBB
01	26 JUNE 98			



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PROJ: TRACK SYSTEM RISER DIAGRAM OPTION #2

TITLE: TRACK/FOOTBALL SCBD W/ FINISH LYNX - IN PRESS BOX

DESIGN: DRAWN: JWHITAK DATE: 07-28-97

SCALE: 1=1

SHEET REV JOB NO. FUNC-TYPE-SIZE

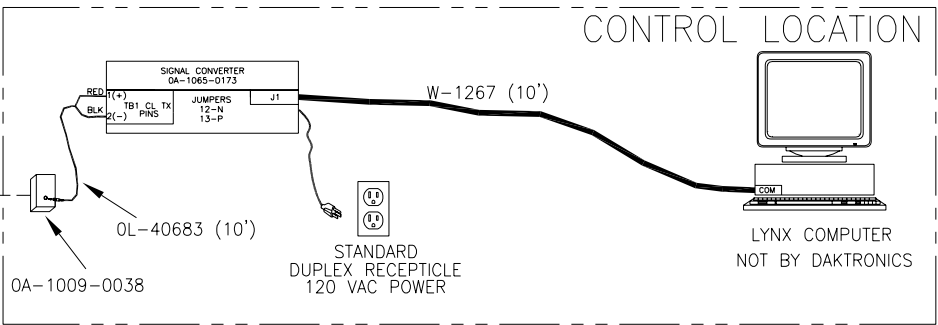
06 P1125 P-08-A

95154

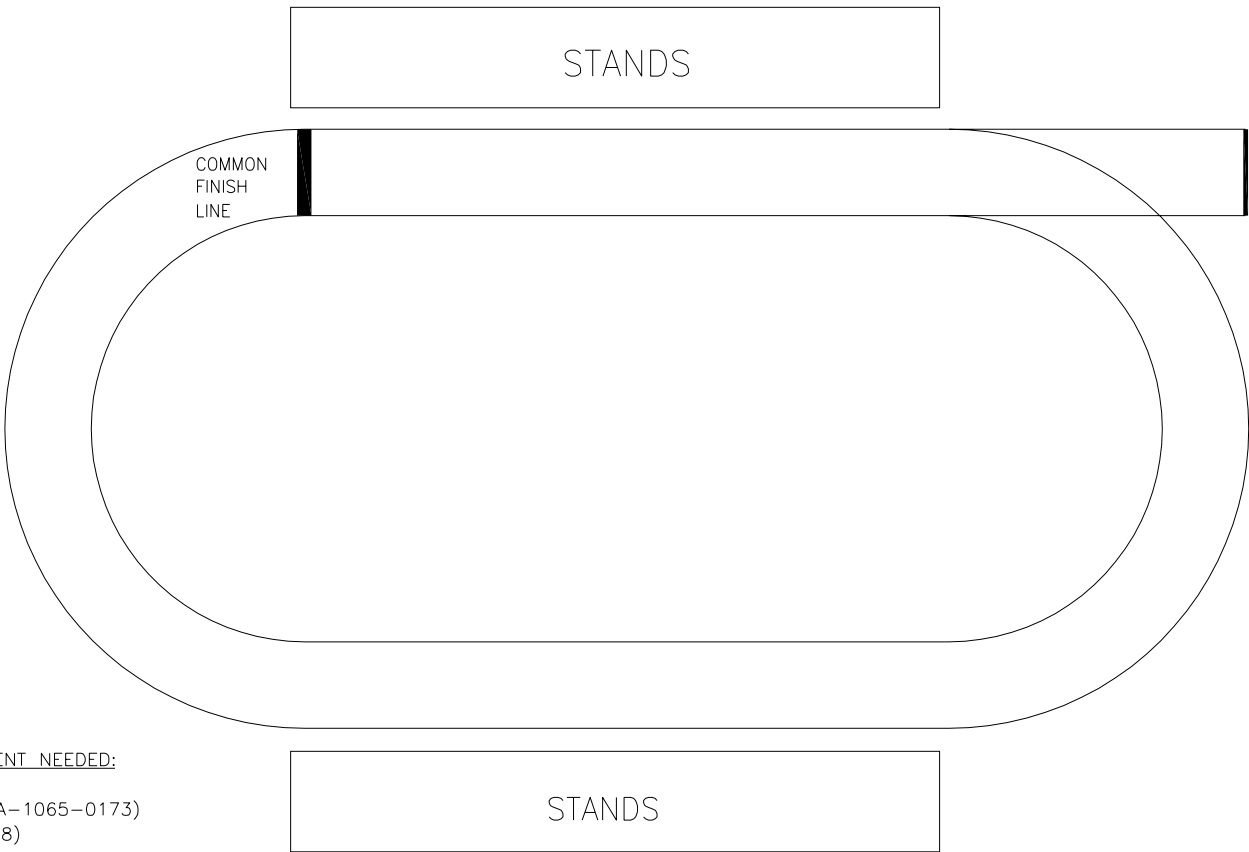
TRACK SYSTEM RISER DIAGRAM

TRACK SCBD W/ FINISH LYNX

LYNX SCBD OUTPUT SETTINGS:
 SCRIPT: OMNI1000PLACE.LSS
 BAUD: 9600
 DATA BITS: 7
 PARITY: EVEN
 STOP BITS: 2
 RUNNING TIME: NORMAL
 RESULTS: ON
 PAGE SIZE: EQUAL TO NUMBER OF
 LINES ON SCOREBOARD



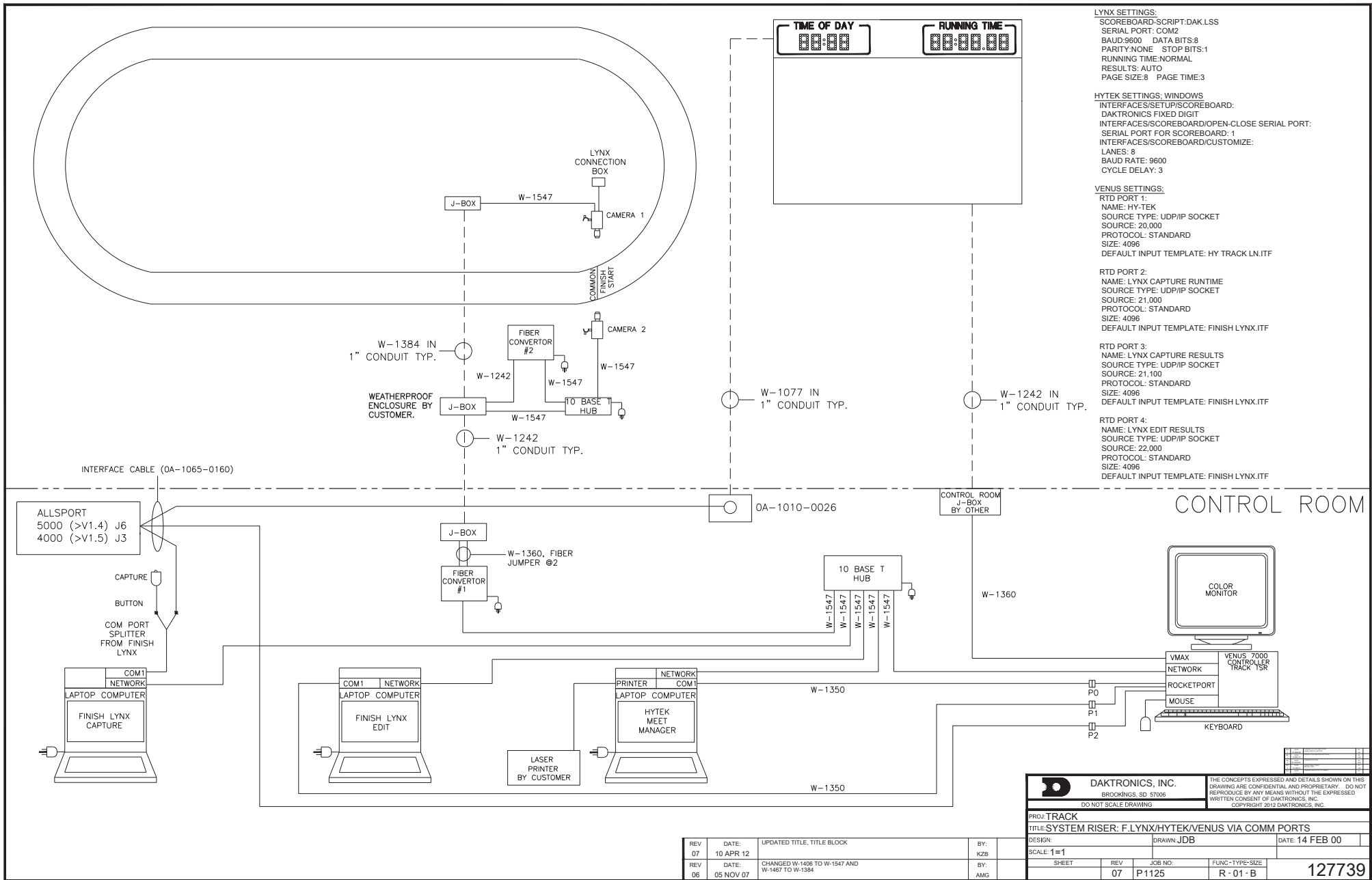
SEE SCOREBOARD
SPECIFICATIONS



- TYPICAL INTERFACE EQUIPMENT NEEDED:
- | QTY | |
|-----|---------------------------------|
| 1 | SIGNAL CONVERTER (OA-1065-0173) |
| 1 | J-BOX (OA-1009-0038) |
| 1 | CABLE (OL-40683) |
| 1 | CABLE (W-1267) |

05	05 NOV 07	CHANGED OMNI1000.LSS TO OMNI1000PLACE.LSS	AMG	
04	21 MAR 05	REORGANIZED DRAWING ADDED DETAIL TO SIG CONVERTER	KQB	
3	15 SEP 03	CHANGED SIGNAL CONVERTER DRAWING TO SHOW JACK NUMBERS AND PINS	LWS	
2	28 DEC 98	UPDATED DRAWING, ADDING LYNX SCBD OUTPUT SETTINGS.	CJB	
1	29 JUNE 98	UPDATED DESCRIPTION OF SCBD.	HBB	
REV.	DATE	DESCRIPTION	BY	APPR.

© COPYRIGHT 1997 DAKTRONICS, INC			
DAKTRONICS, INC. BROOKINGS, SD 57006			
PROJ: TRACK SYSTEM RISER DIAGRAM OPTION #4			
TITLE: TRACK SCBD W/ FINISH LYNX, IN PRESS BOX			
DES. BY:	DRAWN BY: HBONER	DATE: 26 JUNE 98	
REVISION	APPR. BY:	1125-R01A-104300	
05	SCALE: 1=1		



FOOTBALL/TRACK SCBD WITH OMNISPORT 2000, TRACK SIDE



OMNISPORT 2000 (TRACK TIMER) @ 1
W-1238 30' SIGNAL CABLE @ 1
0A-1091-0227 TRACK SIDE J-BOX @ 1
0A-1240-0010 BUTTON INTERFACE @ 1
0A-1056-0156 12' PUSH BUTTON @ 9

```
-CLIENT #1 ON, #2,3,4,5,6 OFF
-SERVER #1,5 ON, #2,3,4,6 OFF
```

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DO NOT SCALE DRAWING			
PROJECT: OMNISPORT 2000			
TITLE: SYSTEM RISER: FB/TRACK SCBD W/ OMNI2K- TRACK SIDE			
DESIGN: MILLER		DRAWN: MILLER	
SCALE: NONE		DATE: 08 APR 03	
SHEET:	REV.	JOB NO.	FUNC. TYPE SIZE
	07	P1240	R- 01 - A
			186535

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TRACK SCBD WITH
OMNISPORT 2000E, TRACK SIDE

(A)



STANDS

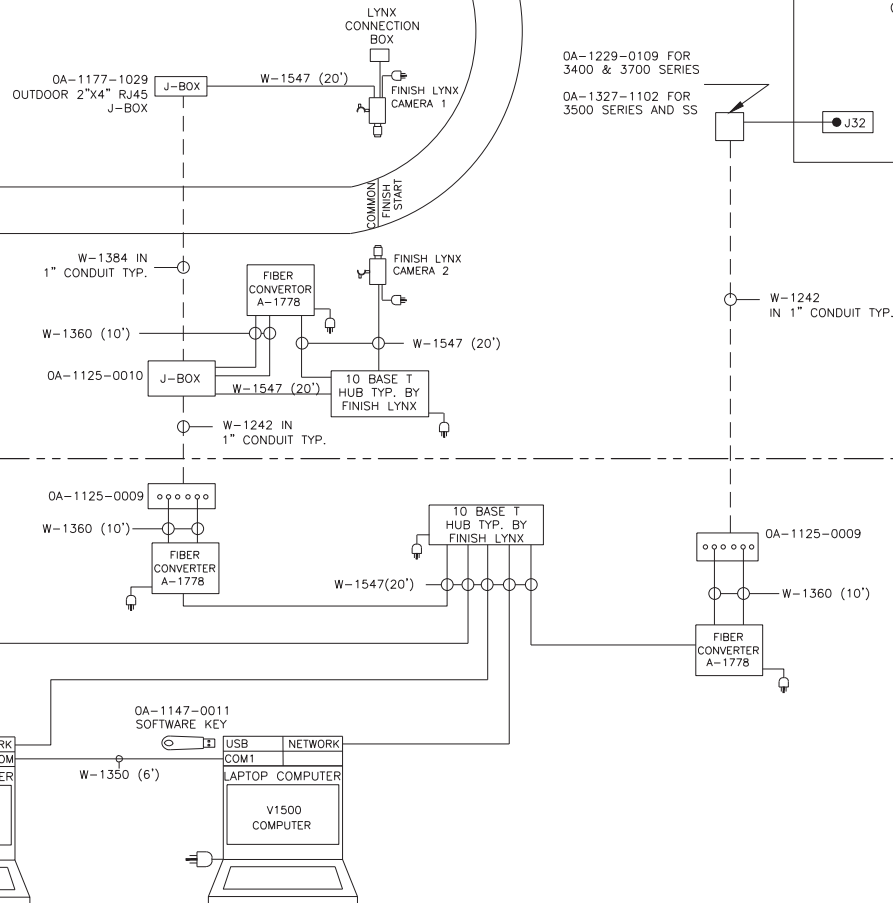


0A-1240-0082
OMNISPORT 2000 WITH E-NET

-IF MORE THAN 8 LANES ARE REQUIRED, OR MORE THAN 1 BUTTON PER LANE, REPLACE 0A-1240-0010 WITH 0A-1240-0016 AND ORDER THE NUMBER OF BUTTONS NEEDED.

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DO NOT SCALE DRAWING					
PROJ: OMNI SPORT 2000E TIMER					
TITLE: SYSTEM RISER, TRACK SCBD /W OMNI 2K- TRACK SIDE					
DESIGN: MMILLER				DRAWN:MMILLER	
SCALE: 1=1				DATE: 08 APR 03	
SHEET	REV	JOB NO.	FUNC-TYPE-SIZE		
	06	P1240	R-01-A	186548	

NOTE: *THIS IS A GENERIC LAYOUT FOR A LYNX TIMING SYSTEM. ACTUAL LAYOUT MAY VARY.



HY-TEK ALPHA SCBD SETTINGS

INTERFACES/SETUP/SCOREBOARD:
 DAKTRONICS FULL MATRIX
 INTERFACE/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
 SERIAL PORT FOR SCOREBOARD: 1
 INTERFACES/SCOREBOARD/CUSTOMIZE:
 ROWS: EQUAL TO ROWS ON SIGN
 COLUMNS: EQUAL TO COLUMNS ON SIGN
 NUMBER OF BULBS BETWEEN EACH LANE : 1
 FONT SIZE : 7X5 OR 7X4 DEPENDING ON
 SEQUENCE
 BAUD RATE : 19200

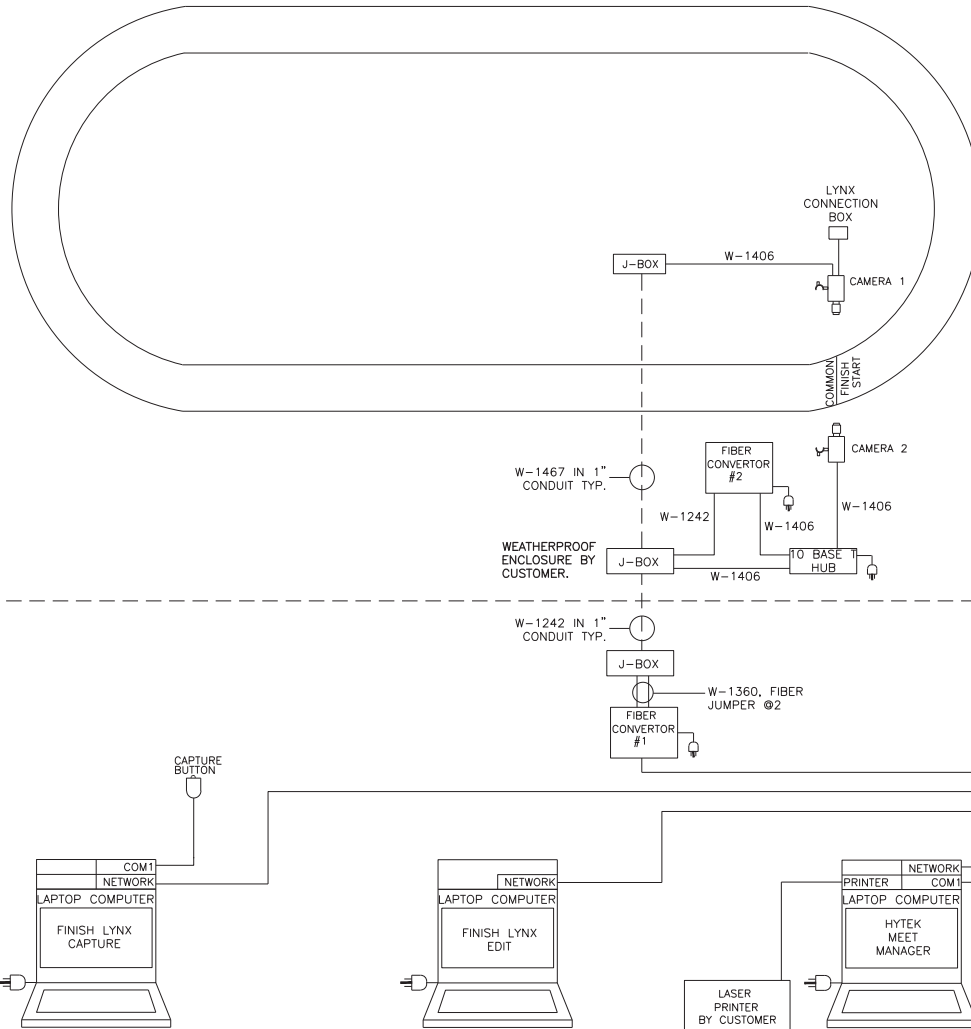
FINISH LYNX SCBD SETTINGS

SCRIPT: DAK.LSS
 COM PORT: UDP
 PORT: 3002
 RUNNING TIME: NORMAL
 RESULTS: AUTO
 PAGE SIZE: (EQUAL TO NUMBER OF LINES
 ON SCOREBOARD)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

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PROJ: TRACK					
TITLE: RISER: V1500/M2/M3/GALAXY, LYNX/HYTEK, ETHERNET					
DESIGN: JWARNE			DRAWN: JFELBER		DATE: 14 MAR 06
SCALE: NONE					
SHEET	REV	JOB NO.	FUNC-TYPE-SIZE		
	07	P1125	R - 01 - B		
					266821

REV	DATE	TITLE	BY
07	10 APR 12	UPDATED	KZB
REV	DATE	TITLE	BY
06	30 AUG 11	DWG INACTIVATED DUE TO SHOW CONTROL SEE RELEVANT DWGS	KZB



VENUS SETTINGS :

RTD PORT 1:
 NAME : HY-TEK
 SOURCE TYPE : UDP/IP SOCKET
 SOURCE : 20.000
 PROTOCOL : STANDARD
 SIZE : 4096
 DEFAULT INPUT TEMPLATE : HY TRACK LN.ITF

RTD PORT 2:
 NAME : LYNX CAPTURE RUNTIME
 SOURCE TYPE : UDP/IP SOCKET
 SOURCE : 21.000
 PROTOCOL : STANDARD
 SIZE : 4096
 DEFAULT INPUT TEMPLATE : FINISH LYNX.ITF

RTD PORT 3:
 NAME : LYNX CAPTURE RESULTS
 SOURCE TYPE : UDP/IP SOCKET
 SOURCE : 21.100
 PROTOCOL : STANDARD
 SIZE : 4096
 DEFAULT INPUT TEMPLATE : FINISH LYNX.ITF

RTD PORT 4:
 NAME : LYNX EDIT RESULTS
 SOURCE TYPE : UDP/IP SOCKET
 SOURCE : 22.000
 PROTOCOL : STANDARD
 SIZE : 4096
 DEFAULT INPUT TEMPLATE : FINISH LYNX.ITF

LYNX CAPTURE SETTINGS:

-OPTIONS
 *SCOREBOARD 1
 SERIAL PORT : NETWORK (UDP)
 PORT : 21.000
 IP ADDRESS : BLANK
 RUNNING TIME : NORMAL
 RESULTS : OFF

*SCOREBOARD 2
 SERIAL PORT : NETWORK (UPD)
 PORT : 21.100
 IP ADDRESS : BLANK
 RUNNING TIME : OFF
 RESULTS : AUTO

LYNX EDIT SETTINGS:

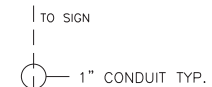
-OPTIONS
 *SCOREBOARD 1
 SERIAL PORT : NETWORK (UDP)
 PORT 22.000
 IP ADDRESS : BLANK
 RUNNING TIME : OFF
 RESULTS : AUTO

HYTEK SETTINGS: WINDOWS

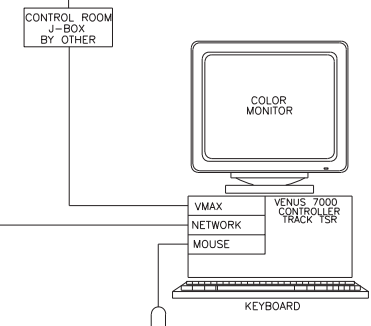
INTERFACES/SETUP/SCOREBOARD:
 DAKTRONICS FIXED DIGIT

INTERFACES/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
 SERIAL PORT FOR SCOREBOARD: 1

INTERFACES/SCOREBOARD/CUSTOMIZE:
 LANES: 8
 BAUD RATE: 19,200
 CYCLE DELAY: 8

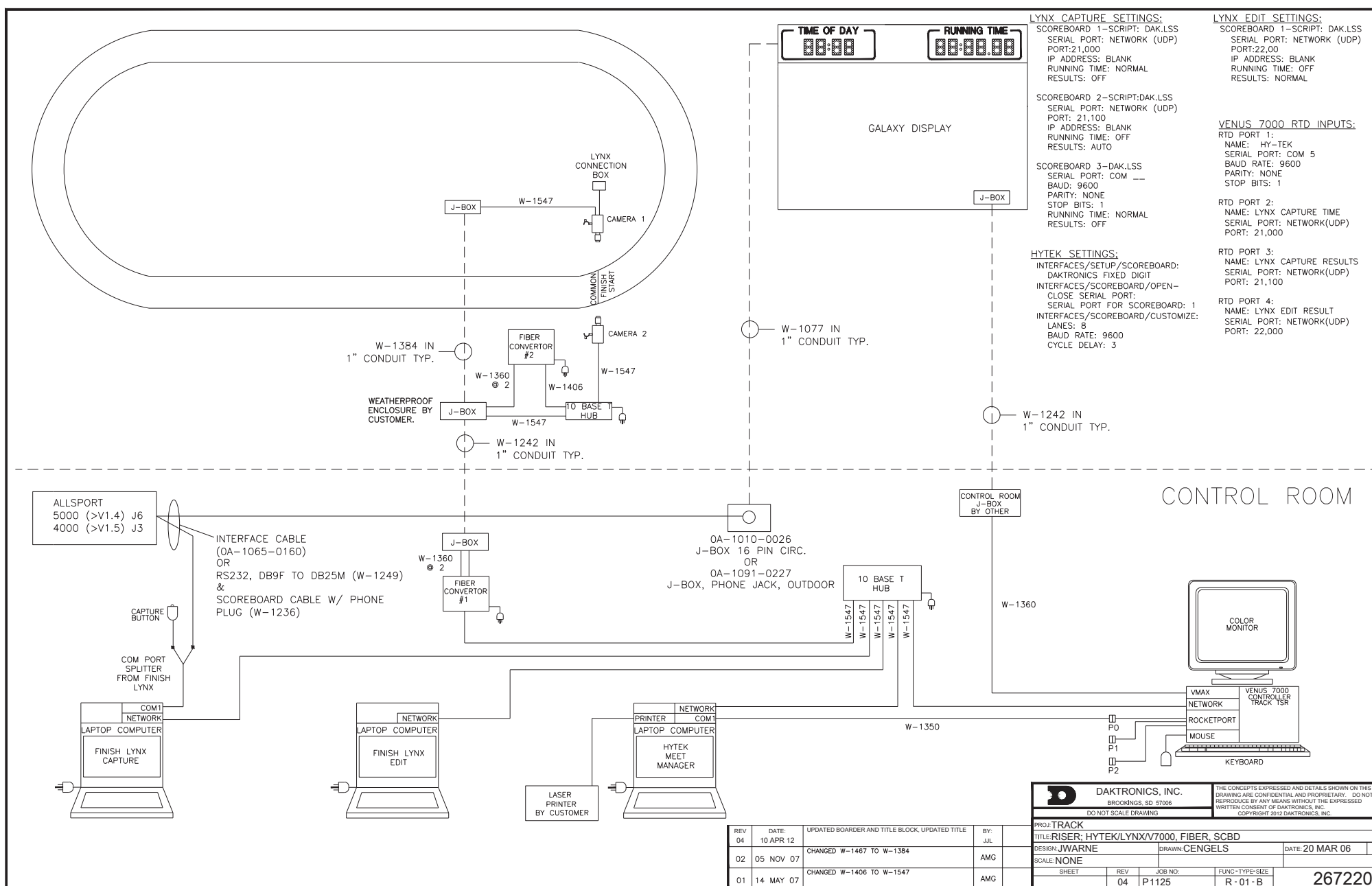


CONTROL ROOM

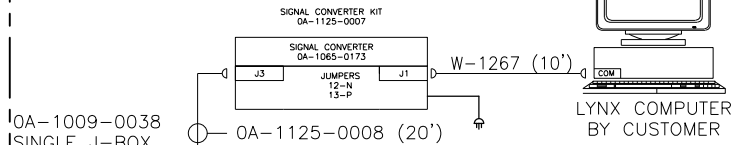


LANTRONIX SETTINGS:
 BAUD RATE : 19,200
 UDP : 20,000

REV 01	DATE 10 APR 12	UPDATED TITLE BLOCK	BY: KZB
		DAKTRONICS, INC. BROOKINGS, SD 57006	THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2012 DAKTRONICS, INC.
DO NOT SCALE DRAWING			
PROJ: TRACK			
TITLE: SYSTEM RISER: FINISH LYNX/HYTEK/VENUS VIA NETWORK			
DESIGN: JWARNE		DRAWN: JFELBER	DATE: 16 MAR 06
SCALE: NONE			
SHEET	REV	JOB NO.	FLWC-TYPE-SIZE
	01	1125	R-01-B
			267013



CONTROL LOCATION



LYNX SCBD OUTPUT SETTINGS
(TI-2020, TI-2021):
SCRIPT: DAKMDP.LSS
BAUD: 19200
DATA BITS: 8
PARITY: NONE
STOP BITS: 1
RUNNING TIME: NORMAL
RESULTS: OFF
PAGING SIZE: 1

LYNX SCBD OUTPUT SETTINGS
(TI-3101):
SCRIPT: DAKTR-3101.LSS
BAUD: 19200
DATA BITS: 8
PARITY: NONE
STOP BITS: 1
RUNNING TIME: NORMAL
RESULTS: OFF
PAGING SIZE: 1

STANDS

COMMON
FINISH
LINE

OA-1091-0227
OUTDOOR 1/4" JBOX

W-1236

TI-2020, TI-2021,
OR TI-3031
LED SCOREBOARD

OPTION 2

SIG. CONVERTER
OA-1125-0007

SERIAL ON
LYNX CONNECTION BOX

CAMERA

TI-2020, TI-2021,
OR TI-3101

STANDS



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BROOKINGS, SD 57006

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PROJECT: TRACK SYSTEM RISER DIAGRAM

TITLE: RISER, TI-2020, -2021, -3101 W/ FINISH LYNX

DESIGN:

DRAWN: JFELBER

DATE: 23 MAR 06

SCALE:

SHEET

REV

JOB NO:

FUNC-TYPE-SIZE

01 23 MAR 06

ADD TRACKSIDE SCOREBOARD
CHG CONTROL LOCATION DETAILS

KZB

02 05 AUG 11

ADD TI-3031 DETAILS

KZB

267638

NOTE: *THIS IS A GENERIC LAYOUT FOR A LYNX TIMING SYSTEM. ACTUAL LAYOUT MAY VARY.

HY-TEK ALPHA SCBD SETTINGS

INTERFACES/SETUP/SCOREBOARD:
DAKTRONICS FULL MATRIX
INTERFACE/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
SERIAL PORT FOR SCOREBOARD: 1
INTERFACES/SCOREBOARD/CUSTOMIZE:
ROWS: EQUAL TO ROWS ON SIGN
COLUMNS: EQUAL TO COLUMNS ON SIGN
NUMBER OF BULBS BETWEEN EACH LANE : 1
FONT SIZE : 7X5 OR 7X4 DEPENDING ON
SEQUENCE
BAUD RATE : 19200

FINISH LYNX
SCBD SETTINGS

SCRIPT: DAK.LSS
SERIAL-PORT: COM1
BAUD: 19200
RUNNING TIME: NORMAL
RESULTS: AUTO
PAGE SIZE: (EQUAL TO THE NUMBER OF
LINES ON THE SCOREBOARD)

GALAXY DISPLAY

0A-1125-0011 FOR
3400 & 3700 SERIES

0A-1125-0013 FOR
3500 SERIES AND SS.

W-1077, FIELD TERMINATED
IN 1" CONDUIT
SEE DETAIL 'A'

W-1456 IN 1" CONDUIT TYP.

DETAIL 'A'

GALAXY DISPLAY

RED WIRE
TO TB3 SIG+
BLACK WIRE
TO TB3 SIG-

M2 OR M3
CONTROLLER

RED TO
TB1-2
BLACK TO
TB1-6

0A-1125-0011

W-1077 IN 1" CONDUIT

CONTROL LOCATION

0A-1125-0009

W-1360 (10')

FIBER
CONVERTER
A-1778

W-1547 (20')

10 BASE T
TYP. HUB BY
FINISH LYNX

0A-1125-0009 &
0A-1196-0131
6 POSITION SPLICE
BOX W/ SINGLE CL
TO FIBER CONVERTER

W-1360 (10')

FIBER
CONVERTER
A-1778

0A-1125-0007 CONTROL KIT.
INCLUDES CABLES AND SIG.
CONV.

0A-1125-0008 (20')

EITHER HYTEK OR
FINISH LYNX

SIGNAL CONVERTER
0A-1065-0173

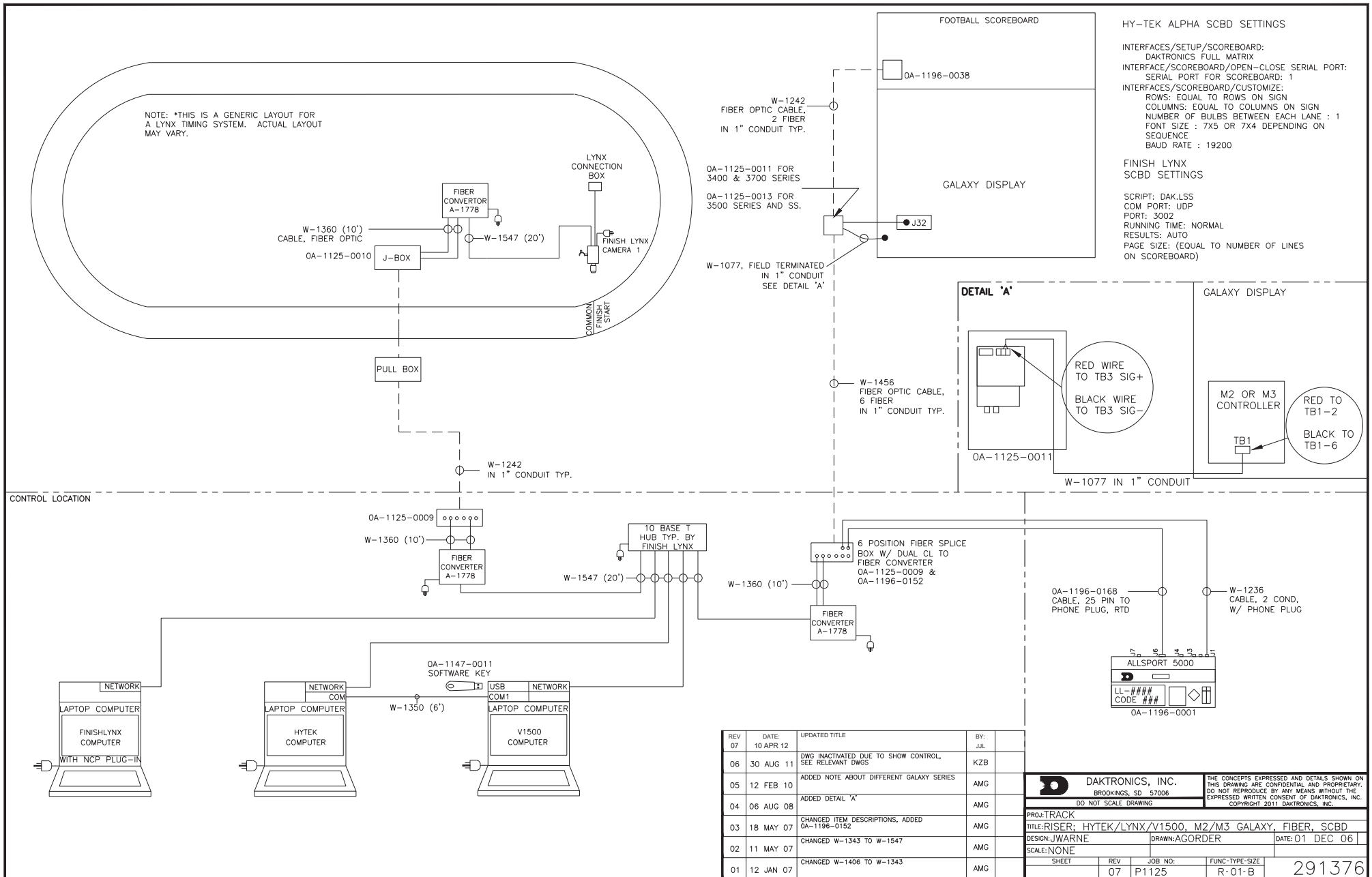
JUMPERS
12-N
13-P

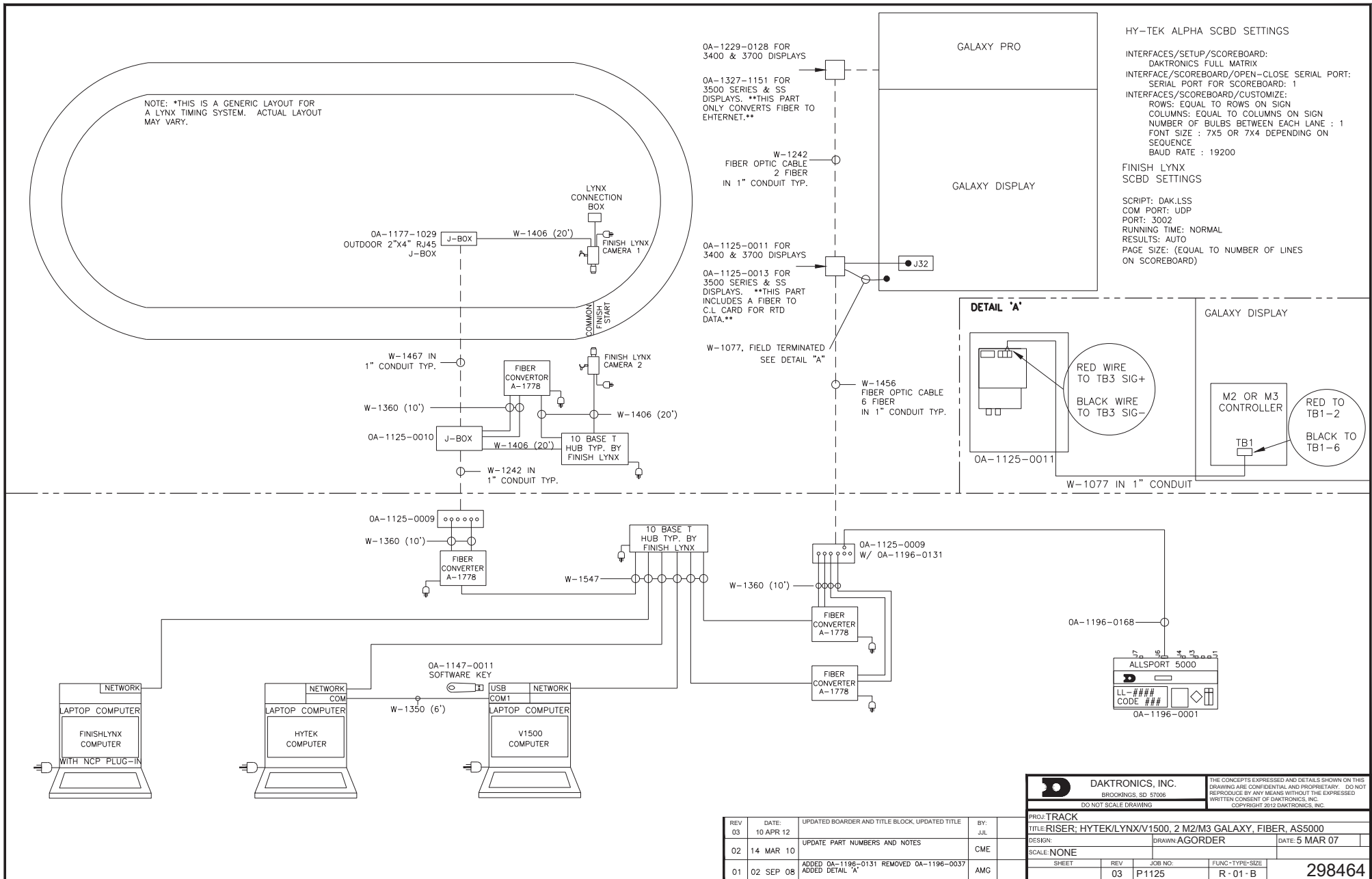
W-1267 (10')

CONNECT
TO
EITHER
HY-TEK
OR
LYNX

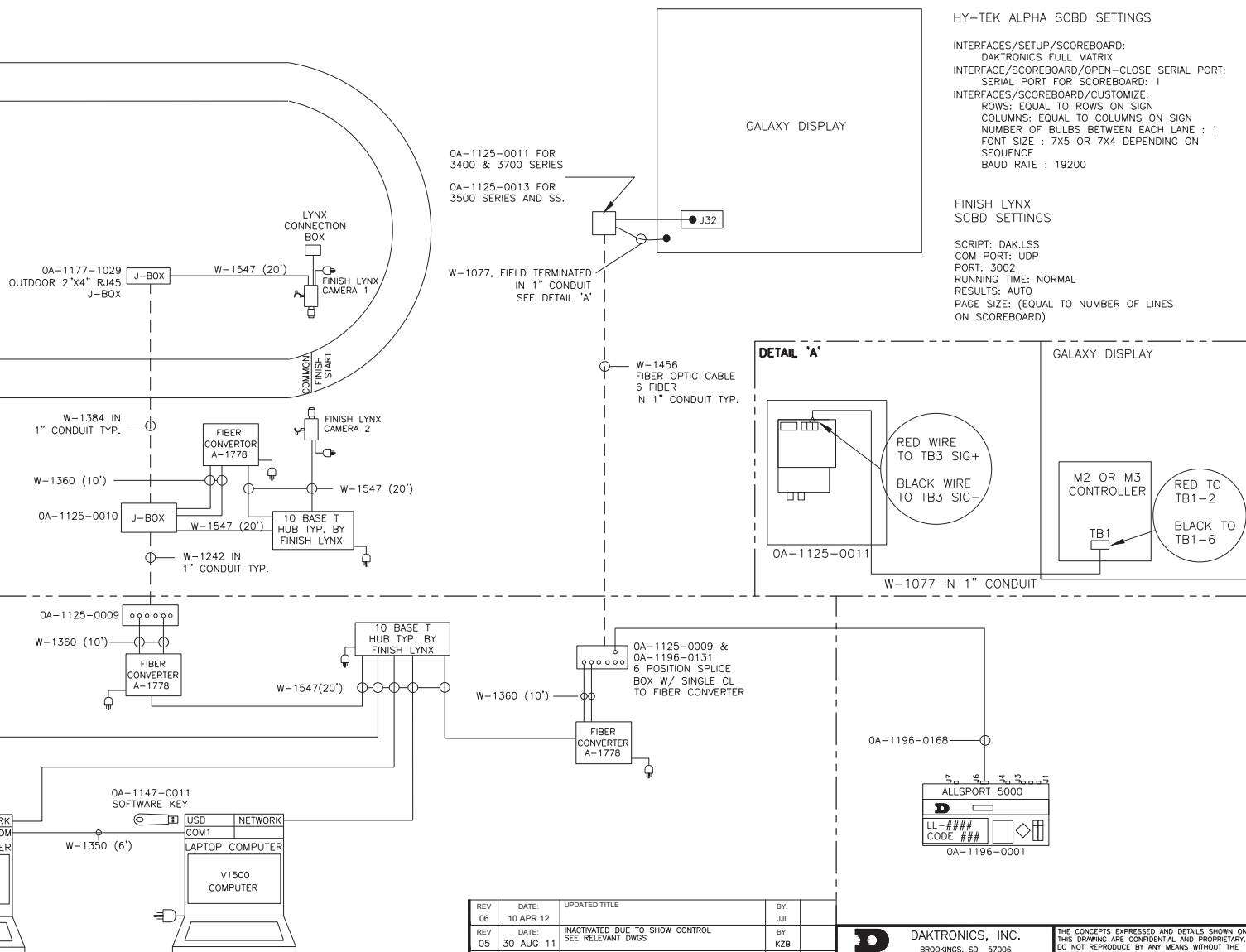
REV	DATE	UPDATED BOARDER AND TITLE BLOCK, UPDATED TITLE	BY:	
08	10 APR 12		JUL	
07	12 FEB 10	ADDED NOTE ABOUT DIFFERENT GALAXY SERIES	AMG	
06	06 AUG 08	ADDED DETAIL 'A'	AMG	
05	05 NOV 07	CHANGED W-1467 TO W-1384	AMG	
04	18 MAY 07	REMOVED 0A-1196-0037 AND ADDED 0A-1196-0131	AMG	
03	11 MAY 07	CHANGED W-1343 TO W-1406	AMG	
02	12 JAN 07	CHANGED W-1406 TO W-1343	AMG	
01	20 NOV 06	CHANGED J-BOX FROM 0A-1091-0227 TO 0A-1196-0037, CHANGED SPLICE BOX TO 0A-1125-0009, AND J-BOX TO 0A-1125-0010	AMG	

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DO NOT SCALE DRAWING			
PROJ: TRACK SYSTEM RISER DIAGRAM TITLE: RISER: HYTEK/LYNX/V1500, M2/M3 GALAXY, FIBER			
DESIGN: JWARNE		DRAWN: JFELBER	
SCALE: NONE		DATE: 24 MAR 06	
SHEET	REV	JOB NO.	FLWC-TYPE-SIZE
	08	P1125	R-10-B
			267688





NOTE: *THIS IS A GENERIC LAYOUT FOR A LYNX TIMING SYSTEM. ACTUAL LAYOUT MAY VARY.



HY-TEK ALPHA SCBD SETTINGS

INTERFACES/SETUP/SCOREBOARD:
 DAKTRONICS FULL MATRIX
 INTERFACE/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
 SERIAL PORT FOR SCOREBOARD: 1
 INTERFACES/SCOREBOARD/CUSTOMIZE:
 ROWS: EQUAL TO ROWS ON SIGN
 COLUMNS: EQUAL TO COLUMNS ON SIGN
 NUMBER OF BULBS BETWEEN EACH LANE : 1
 FONT SIZE : 7X5 OR 7X4 DEPENDING ON
 SEQUENCE
 BAUD RATE : 19200

FINISH LYNX SCBD SETTINGS

SCRIPT: DAK.LSS
 COM PORT: UDP
 PORT: 3002
 RUNNING TIME: NORMAL
 RESULTS: AUTO
 PAGE SIZE: (EQUAL TO NUMBER OF LINES
 ON SCOREBOARD)

GALAXY DISPLAY

OA-1125-0011 FOR
 3400 & 3700 SERIES
 OA-1125-0013 FOR
 3500 SERIES AND SS.

W-1077, FIELD TERMINATED
 IN 1" CONDUIT
 SEE DETAIL 'A'

W-1456
 FIBER OPTIC CABLE
 6 FIBER
 IN 1" CONDUIT TYP.

DETAIL 'A'

GALAXY DISPLAY

RED WIRE
 TO TB3 SIG+
 BLACK WIRE
 TO TB3 SIG-

M2 OR M3
 CONTROLLER

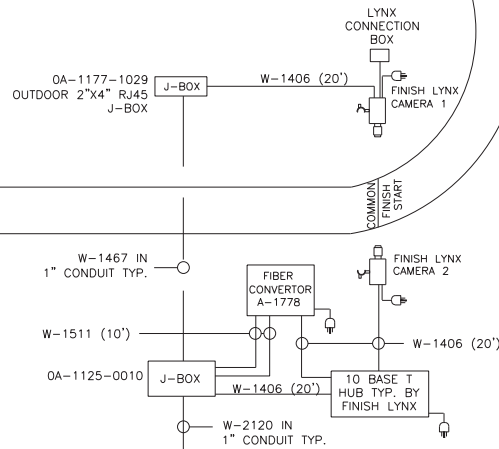
RED TO
 TB1-2
 BLACK TO
 TB1-6

W-1077 IN 1" CONDUIT

REV	DATE	UPDATED TITLE	BY:
06	10 APR 12		JLL
05	30 AUG 11	INACTIVATED DUE TO SHOW CONTROL SEE RELEVANT DWGS	KZB
04	12 FEB 10	ADDED NOTE ABOUT DIFFERENT GALAXY SERIES	AMG
03	05 AUG 08	ADDED DETAIL 'A'	AMG
02	18 MAY 07	REMOVED OA-1196-0037 AND ADDED OA-1196-0131	AMG
01	14 MAY 07	CHANGED W-1343 AND W-1406 TO W-1547	AMG

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PROJ: TRACK					
TITLE: RISER: HYTEK/ LYNX/ V1500, M2/ M3 GALAXY, FIBER, AS5000					
DESIGN: JWARNE			DRAWN: KBIERBA		DATE: 5 MAR 07
SCALE: NONE					
SHEET		REV	JOB NO:	FUNC-TYPE-SIZE	
06		P1125		R-01-B	298848

NOTE: *THIS IS A GENERIC LAYOUT FOR A LYNX TIMING SYSTEM. ACTUAL LAYOUT MAY VARY.



GALAXY DISPLAY

FINISH LYNX CAPTURE SCBD SETTINGS (W/ SCBD)

SCRIPT: DAK.LSS
SERIAL PORT: NETWORK (UDP)
PORT: 3002
RUNNING TIME: NORMAL
RESULTS: OFF

FINISH LYNX CAPTURE SCBD SETTINGS (W/O SCBD)

SCRIPT: POWERTIME.LSS
SERIAL PORT: COM (#)
BAUD: 9600, DATA BITS: 7,
PARITY: EVEN, STOP BITS: 1
RUNNING TIME: NORMAL
RESULTS: NONE

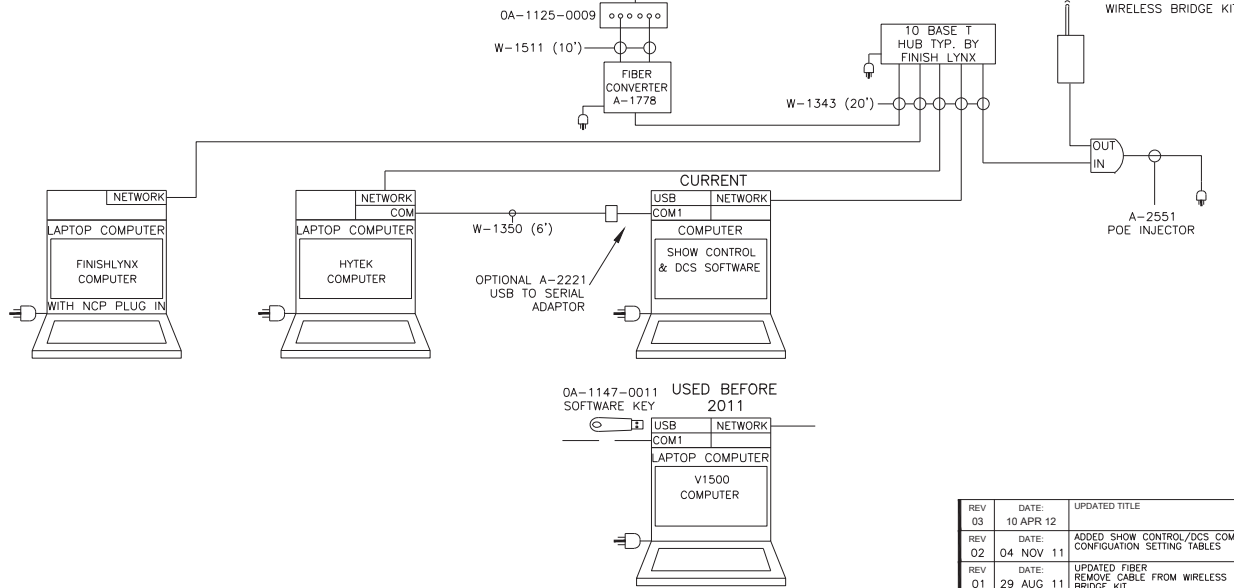
FINISH LYNX EDIT SCBD SETTINGS

SCRIPT: DAK.LSS
SERIAL PORT: NETWORK (UDP)
PORT: 21100
RUNNING TIME: OFF
RESULTS: AUTO
PAGE SIZE: (EQUAL TO NUMBER OF LINES ON SCOREBOARD)
NORMAL RESULTS: NONE

HY-TEK ALPHA SCBD SETTINGS

INTERFACES/SETUP/SCOREBOARD:
DAKTRONICS FULL MATRIX
INTERFACE/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
SERIAL PORT FOR SCOREBOARD: 1
INTERFACES/SCOREBOARD/CUSTOMIZE:
ROWS: EQUAL TO ROWS ON SIGN
COLUMNS: EQUAL TO COLUMNS ON SIGN
NUMBER OF BULBS BETWEEN EACH LANE : 1
FONT SIZE : 7X5 DEPENDS ON SEQUENCE
BAUD RATE : 19200

CONTROL LOCATION



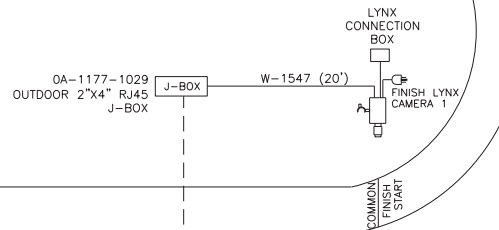
DCS SETTINGS

DAK#: ER-1814159
INPUT PORT 1: OPEN
INPUT PORT 2:
NAME: HYTEK, TYPE: SERIAL PORT
COM (#), BAUD: 19200,
DATA BITS: 8, PARITY: NONE
INPUT TEMPLATE: BLANK
SCRIPT NAME: OFFSETSTANDARDRTD5000.DDS
INPUT PORT 3:
NAME: FINISH LYNX EDIT, TYPE: UDP/IP SOCKET
PORT: 21100, BROADCAST: CHECKED
INPUT TEMPLATE: BLANK
SCRIPT NAME: OFFSETSTANDARDRTD10000.DDS
INPUT PORT 4: OPEN
PORT 5:
NAME: OUTPUT, TYPE: UDP/IP SOCKET
PORT: 3002, BROADCAST: CHECKED
INPUT TEMPLATE: BLANK
ADVANCED >>
MODE: TRANSMIT ONLY
ENABLE RTD PROTOCOLS: CHECKED
VERIFY ERD CHECKSUM: CHECKED

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PROJ: TRACK W/ V1500 TITLE: RISER: HYTEK/LYNX/SHOW CNTRL, M2/M3 GALAXY, EBR RADIO DESIGN: JWARNE SCALE: NONE		DRAWN: SLOUWAG DATE: 30 MAR 07	
SHEET	REV	JOB NO.	FLWC-TYPE-SIZE
	03	P1125	R-01-B
			300928

REV	DATE	UPDATED TITLE	BY:
03	10 APR 12		JAL
02	04 NOV 11	ADDED SHOW CONTROL/DCS COMPUTER AND MORE CONFIGURATION SETTING TABLES	BY:
01	29 AUG 11	UPDATED FIBER REMOVE CABLE FROM WIRELESS BRIDGE KIT	KZB

NOTE: *THIS IS A GENERIC LAYOUT FOR A LYNX TIMING SYSTEM. ACTUAL LAYOUT MAY VARY.

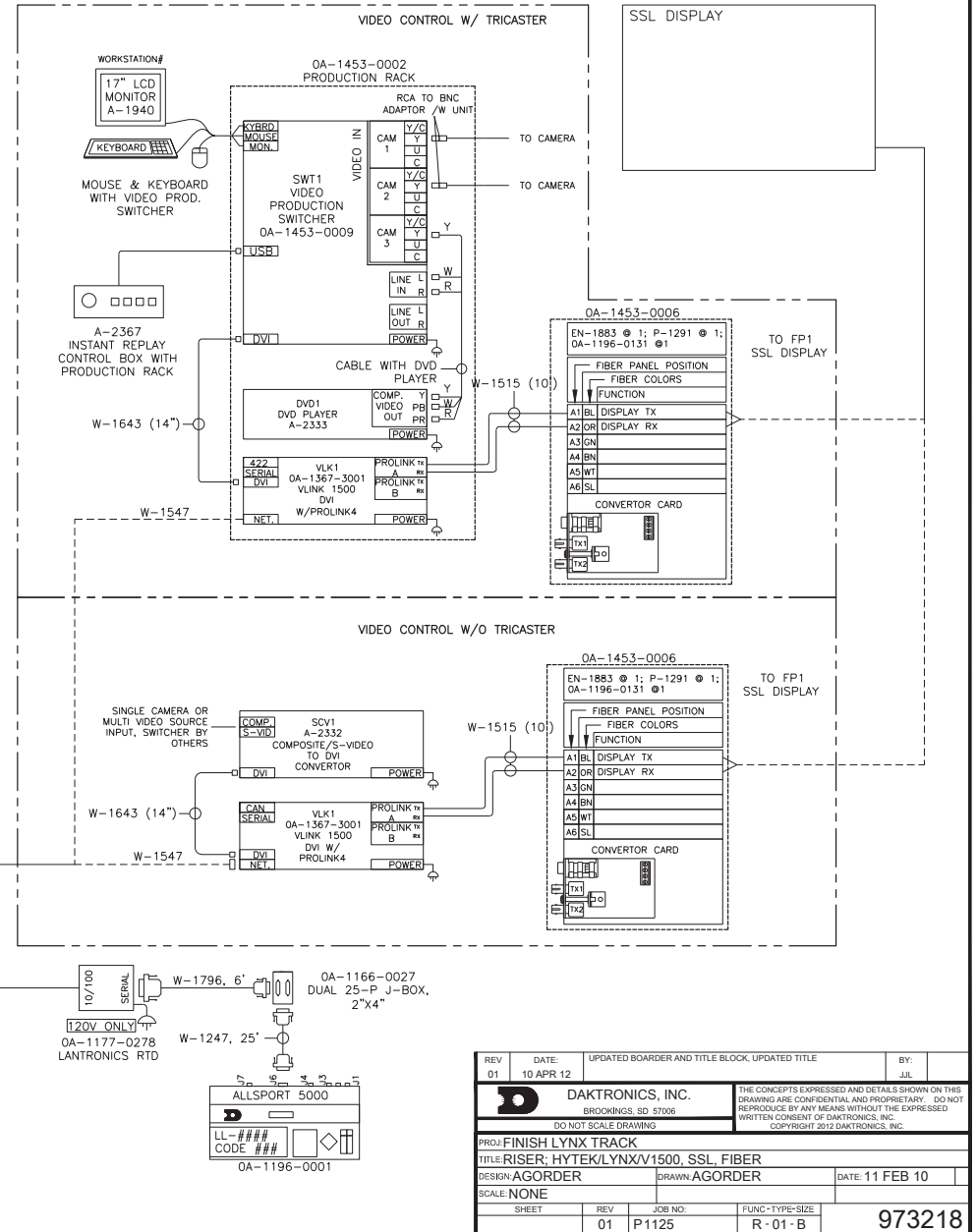
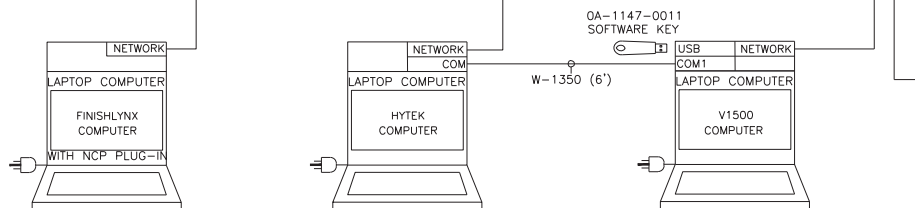


HY-TEK ALPHA SCBD SETTINGS

INTERFACES/SETUP/SCOREBOARD:
DAKTRONICS FULL MATRIX
INTERFACE/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
SERIAL PORT FOR SCOREBOARD: 1
INTERFACES/SCOREBOARD/CUSTOMIZE:
ROWS: EQUAL TO ROWS ON SIGN
COLUMNS: EQUAL TO COLUMNS ON SIGN
NUMBER OF BULBS BETWEEN EACH LANE : 1
FONT SIZE : 7X5 OR 7X4 DEPENDING ON SEQUENCE
BAUD RATE : 19200

FINISH LYNX SCBD SETTINGS

SCRIPT: DAK.LSS
COM PORT: UDP
PORT: 3002
RUNNING TIME: NORMAL
RESULTS: AUTO
PAGE SIZE: (EQUAL TO NUMBER OF LINES ON SCOREBOARD)



REV	DATE	UPDATED BOARDER AND TITLE BLOCK, UPDATED TITLE	BY
01	10 APR 12		JLL
DAKTRONICS, INC. BROOKINGS, SD 57006 DO NOT SCALE DRAWING			
THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE EXPRESSED WRITTEN CONSENT OF DAKTRONICS, INC.			
PROJ: FINISH LYNX TRACK TITLE: RISER: HYTEK/LYNX/V1500, SSL, FIBER DESIGN: AGORDER DRAWN: AGORDER DATE: 11 FEB 10			
SCALE: NONE			
SHEET	REV	JOB NO.	FLWC-TYPE-SIZE
	01	P1125	R-01-B

973218

INTERFACES/SETUP/SCOREBOARD:
DAKTRONICS FULL MATRIX
INTERFACE/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
SERIAL PORT FOR SCOREBOARD: 1
INTERFACES/SCOREBOARD/CUSTOMIZE:
ROWS: EQUAL TO ROWS ON SIGN
COLUMNS: EQUAL TO COLUMNS ON SIGN
NUMBER OF BULBS BETWEEN EACH LANE : 1
FONT SIZE : 7X5 DEPENDS ON SEQUENCE
BAUD RATE : 19200

***2. FINISH LYNX CAPTURE MATRIX SETTINGS**
(THIS SETUP DOES NOT REQUIRE DCS SOFTWARE. THESE SETTINGS SEND BOTH RUNTIME AND RESULTS FROM FINISH LYNX CAPTURE ON UDP/3002. USED SOLELY WITH SETTINGS 1. NOT TO BE USED WITH SETTINGS 3,4,6.)

Diagram illustrating the connection of four laptops to a Network Router:

- Network Router:** Ports 1 through 8 are labeled. A label **W-1343** is associated with the router.
- Laptop 1:** Screen displays "FINISH LYNX W/NCP -EDIT". It is connected to the router via port 1. A label **W-1350** is associated with this laptop.
- Laptop 2:** Screen displays "HYTEX ALPHA SCOREBOARD". It is connected to the router via port 2.
- Laptop 3:** Screen displays "SHOW CONTROL /DCS". It is connected to the router via port 3. A label **DCS INSTALL CD 0A-1453-0035** is associated with this laptop.
- Laptop 4:** Screen displays "FINISH LYNX W/NCP -CAPTURE". It is connected to the router via port 4.

(REQUIRES DCS SETTINGS (6), BECAUSE RUNTIME & RESULTS OUTPUTS ARE ON DIFFERENT NETWORK PORTS)

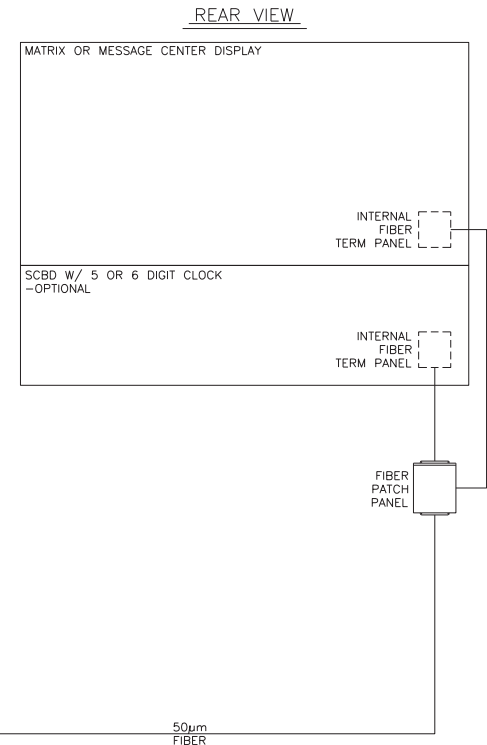
(TYPICALLY 1 RESULTS OUTPUT COMPUTER NEEDED. IF EDIT COMPUTER (4) WILL BE USED, CAPTURE RESULTS (3) IS NOT USED. REQUIRES DCS SETTINGS (6).)

```
SCRIPT: POWERTIME.LSS
SERIAL PORT: COM (#)
        BAUD: 9600, DATA BITS: 7,
        PARITY: EVEN, STOP BITS: 1
RUNNING TIME: NORMAL
RESULTS: NONE
```

```

DAK#: ER-1814159
INPUT PORT 1: OPEN
INPUT PORT 2:
    NAME: HY-TEK, TYPE: SERIAL PORT
    COM (#), BAUD: 19200
    DATA BITS: 8, PARITY: NONE
    INPUT TEMPLATE: BLANK
    ACTIVE FILES, SCRIPT NAME: OFFSETSTANDARDRTD15000.DDS
INPUT PORT 3:
    NAME: FINISH LYNX CAPTURE RESULTS, TYPE: UDP/IP SOCKET
    PORT: 21100, BROADCAST: CHECKED
    INPUT TEMPLATE: BLANK
    ACTIVE FILES, SCRIPT NAME: OFFSETSTANDARDRTD10000.DDS
INPUT PORT 4: NAME: FINISH LYNX EDIT RESULTS, TYPE: UDP/IP SOCKET
    PORT: 22000, BROADCAST: CHECKED
    INPUT TEMPLATE: BLANK
    ACTIVE FILES, SCRIPT NAME: OFFSETSTANDARDRTD15000.DDS
PORT 5:
    NAME: OUTPUT, TYPE: UDP/IP SOCKET
    PORT: 3002, BROADCAST: CHECKED
    INPUT TEMPLATE: BLANK
    ADVANCED >>
        MODE: TRANSMIT ONLY
        ENABLE RTD PROTOCOLS: CHECKED
        VERIFY ERTD CHECKSUM: CHECKED

```



REV 05	DATE: 14 NOV 12	UPDATED ROUTER	BY: KZB	
REV 04	DATE: 06 APR 12	UPDATED DCS SETTINGS	BY: KZB	
REV 03	DATE: 19 OCT 11	REPLACED A-1778 MEDIA CONVERTER WITH A-2826.	BY: SMB	
REV 02	DATE: 02 SEP 11	UPDATED DCS SETTINGS FOR CLARITY	BY: KZB	
REV 01	DATE: 02 DEC 10	CHG ROUTER PART #	BY: KZB	
 DAKTRONICS, INC. BROOKINGS, SD 57006		THE CONCEPTS EXPRESSED AND DETAILS SHOWN ON THIS DRAWING ARE CONFIDENTIAL AND PROPRIETARY. DO NOT REPRODUCE BY ANY MEANS WITHOUT THE WRITTEN CONSENT OF DAKTRONICS, INC. COPYRIGHT 2010 DAKTRONICS, INC.		
DO NOT SCALE DRAWING				
PROJ: M3/SS/SSL DISPLAYS				
TITLE: RISER: HYTEK/LYNX/SHOW CNTRL, FIBER, SCBD, SSL / SS				
DESIGN: KBIERBA		DRAWN: KBIERBA		DATE: 03 JUN 10
SCALE:				
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE	
	05	P1125	R - 01 - B	1019567

① DCS SETTINGS: PORTS
SEE DD2177440 FOR FULL
INSTRUCTIONS

PORT 1:	NAME: HY-TEK UDP/IP PORT 20,000 CHOOSE NETWORK OR SERIAL (**SEE NOTE BELOW**)	OR	NAME: HY-TEK SERIAL PORT: COM1 BAUD: 19200 DATA BITS: 8 PARITY: NONE
---------	---	----	--

PORT 2: NAME: HY-TEK OUTPUT
SOURCE: UDP/IP SOCKET
PORT: 20001

PORT 3: NAME: FINISHLYNX
SOURCE: SERIAL PORT
PORT: COM2
BAUD: 9600
DATA BITS: 8
PARITY: NONE

PORT 4: NAME: FINISHLYNX-OUTPUT
SOURCE: UDP/IP SOCKET
PORT: 21001

PORT 5: NAME:
LYNX-CAPTURE-RUNTIME
SOURCE: UDP/IP SOCKET
PORT: 21000

① DCS SETTINGS: PORTS (CONT)

PORT 6: NAME: LYNX-CAPTURE-RUNTIME-OUTPUT
SOURCE: UDP/IP SOCKET
PORT: 21001

PORT 7: NAME: LYNX-CAPTURE-RESULTS
SOURCE: UDP/IP SOCKET
PORT: 21100

PORT 8: NAME: LYNX-CAPTURE-RESULTS-OUTPUT
SOURCE: UDP/IP SOCKET
PORT: 21101

PORT 9: NAME: LYNX-EDIT-RESULTS
SOURCE: UDP/IP SOCKET
PORT: 22000

PORT 10: NAME: LYNX-EDIT-RESULTS-OUTPUT
SOURCE TYPE: UDP/IP SOCKET
PORT: 22001

① DCS SETTINGS: ACTIVE FILES

PORT 1: HY-TEK
PORT 2: NONE
PORT 3: FINISHLYNX
PORT 4: NONE
PORT 5: LYNX-CAPTURE-RUNTIME
PORT 6: NONE
PORT 7: LYNX-CAPTURE-RESULTS
PORT 8: NONE
PORT 9: LYNX-EDIT-RESULTS
PORT 10: NONE

② HY-TEK ALPHA SCBD SETTINGS HYTEK
VERSION 4.0 OR HIGHER

SETUP>ALPHA SCBD INTERFACE:
SCBD TYPE: DAKTRONICS FULL MATRIX
CONNECTION METHOD: UDP ETHERNET

FROM THE "RUN" SCREEN
INTERFACES>SCOREBOARD-DAKTRONICS FULL MATRIX>
SET UDP PORT AND IP ADDRESS:
- REMOTE SCBD PORT/SOCKET: 20000
- REMOTE SCBD IP ADDRESS: 255.255.255.255

INTERFACE>SCOREBOARD-DAKTRONICS FULL MATRIX
>CUSTOMIZE:

- NUMBER OF ROWS FOR HEADER: XX
- NUMBER OF ROWS FOR LANES: XX
- NUMBER OF CHARACTERS PER ROW: XX
(REFER TO SEQUENCE FOR THIS INFO)

④ FINISH LYNX CAPTURE SCBD SETTINGS

SCRIPT: POWERTIME.LSS
SERIAL PORT: COM (#)
BAUD: 9600, DATA BITS: 7
PARITY: EVEN, STOP BITS: 1
RUNNING TIME: NORMAL
RESULTS: NONE

④ FINISH LYNX CAPTURE RUNTIME SETTINGS

SCRIPT: DAK.LSS
SERIAL PORT: NETWORK (UDP)
PORT: 21000
RUNNING TIME: NORMAL
RESULTS: OFF

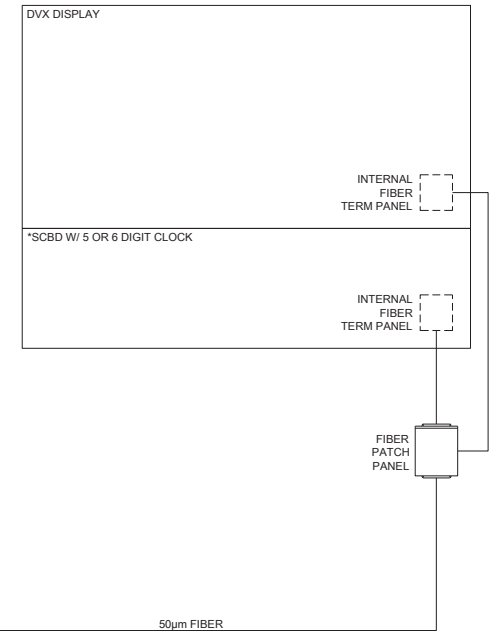
④ FINISH LYNX CAPTURE RESULTS SETTINGS

SCRIPT: DAK.LSS
SERIAL PORT: NETWORK (UDP)
PORT: 21100
RUNNING TIME: OFF
RESULTS: ON

③ FINISH LYNX EDIT SCBD SETTINGS

SCRIPT: DAK.LSS
SERIAL PORT: NETWORK (UDP)
PORT: 22000
RUNNING TIME: OFF
RESULTS: ON

REAR VIEW

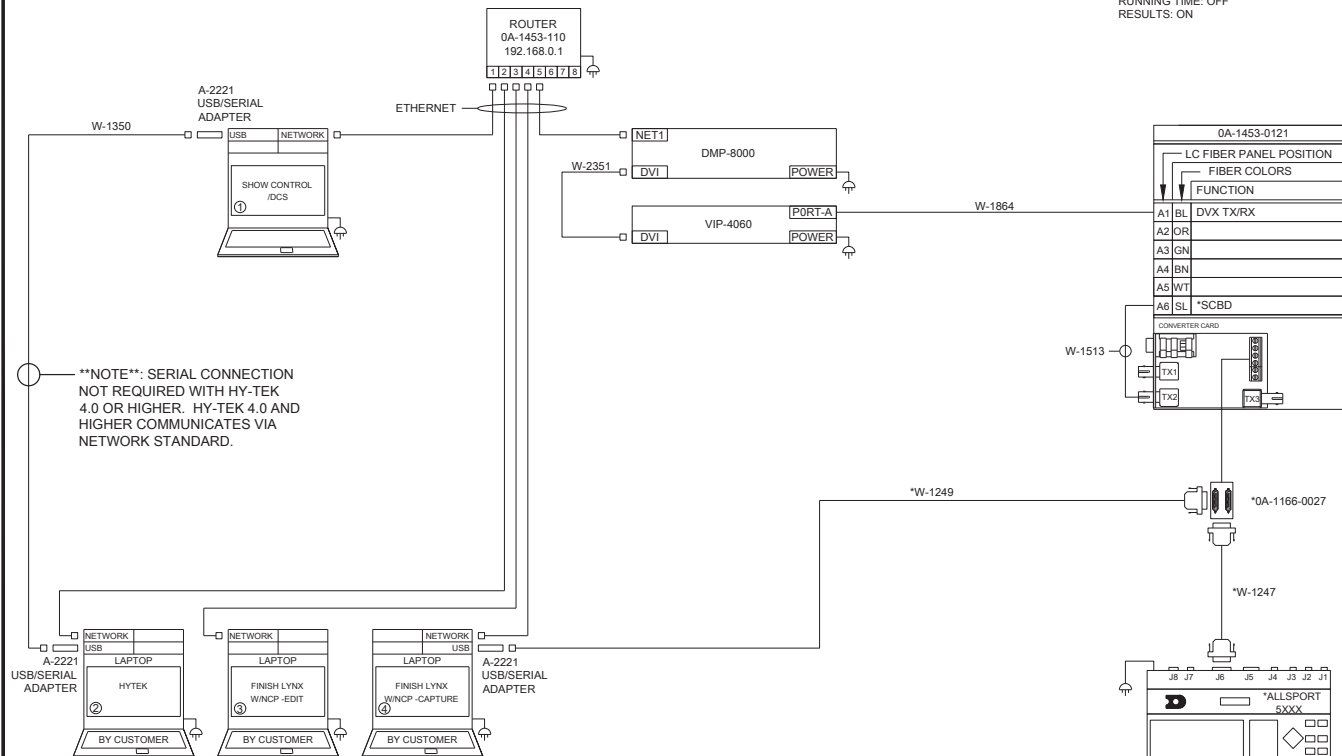


*ALL ITEMS MARKED WITH ASTERISK
ARE OPTIONAL, AND COME TOGETHER

REV 04	DATE: 16 APR 14	REVISED SETTINGS FOR NETWORK COMMUNICATION STANDARD.	BY: SMB
REV 03	DATE: 20 MAR 12	ADD USB/SERIAL ADAPTERS	BY: KZB
REV 02	DATE: 14 MAR 12	UPDATED LAYOUT AND SETTINGS	BY: KZB
REV 01	DATE: 09 MAR 12	ADDED DCS SETTINGS	BY: KZB

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DO NOT SCALE DRAWING			
PROJ: TRACK W/ STANDARD DVX			
TITLE: RISER: HYTEK/LYNX/SHOW CNTRL, FIBER, SCBD, DVX			
DESIGN: KBIERBA		DRAWN: KBIERBA	
SCALE: NONE		DATE: 06 SEP 11	
SHEET	REV	JOB NO.	FLUNC-TYPE-SIZE
	04	P1453	R-01-B

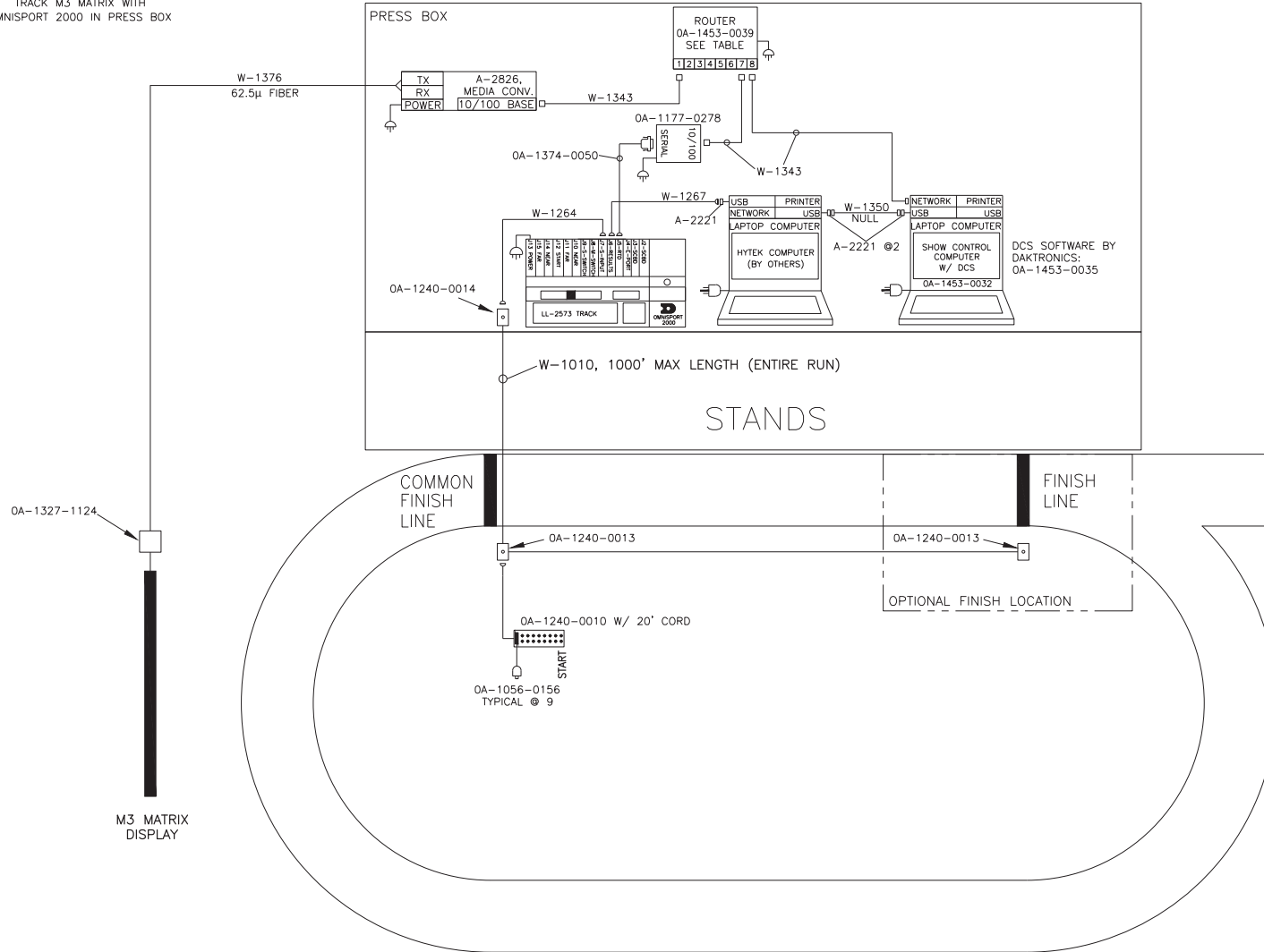
1068144



NOTE: SERIAL CONNECTION
NOT REQUIRED WITH HY-TEK
4.0 OR HIGHER. HY-TEK 4.0 AND
HIGHER COMMUNICATES VIA
NETWORK STANDARD.

TRACK SYSTEM RISER DIAGRAM

TRACK M3 MATRIX WITH
OMNISPORT 2000 IN PRESS BOX



CABLE/DSL ROUTER DEFAULTS

-DAK PART#: OA-1453-0039
-LOCAL IP ADDRESS: 192.168.0.1
-SUBNET MASK: 255.255.255.0
-USER NAME: ADMIN
-PASSWORD: ADMIN
-DHCP RANGE: 192.168.0.100
-192.168.0.149

HY-TEK ALPHA SCRD SETTINGS

INTERFACES/SETUP/SCOREBOARD:
DAKTRONICS FULL MATRIX
INTERFACE/SCOREBOARD/OPEN-CLOSE SERIAL PORT:
SERIAL PORT FOR SCOREBOARD: 1
INTERFACES/SCOREBOARD/CUSTOMIZE:
ROWS: EQUAL TO ROWS ON SIGN
COLUMNS: EQUAL TO COLUMNS ON SIGN
NUMBER OF BULBS BETWEEN EACH LANE: 1
FONT SIZE : 7X5 DEPENDS ON SEQUENCE
BAUD RATE : 19200

DCS SETTINGS

SCRIPT: ER-1814159
INPUT PORT 1: OPEN
INPUT PORT 2: HYTEK
TYPE: SERIAL PORT
COM (#), BAUD: 19200,
DATA BITS: 8, PARITY: NONE
SCRIPT NAME: OFFSETSTANDARDORT5000.DDS
INPUT PORT 3: NOT USED
TYPE: UDP/XXXX
SCRIPT NAME: XXXX
INPUT PORT 4: OPEN
OUTPUT PORT 5: UDP/3002
TX ONLY: CHECKED

TRACK EQUIPMENT BOM:

OA-1240-0002 OMNISPORT 2000 (TRACK TIMER) @ 1
W-1010 12 COND. PUSH BUTTON CABLE @ MAX. 1000'
OA-1240-0013 TRACK SIDE D15F J-BOX @ 1
OA-1240-0014 PRESS BOX D15M J-BOX @ 1
OA-1240-0010 BUTTON INTERFACE @ 1
OA-1056-0156 12' PUSH BUTTON @ 9
W-1264 10' DB15M TO DB15F @ 1
W-1350 6' DB9F TO DB9F NULL @ 1
W-1267 10' DB9M TO DB9F @ 1
A-2826 10/100 BASE MEDIA CONVERTER @ 1
OA-1327-1124 FIBER ETHERNET COMM. BOX @ 1
OA-1453-0032 SCS-2000 TOUCHSMART W7 @ 1
W-1343 14' RJ45 10 BASE NETWORK CABLE @ 1
W-1376 4 FIBER CABLE DX @ DISTANCE TO MATRIX
A-2221 USB TO SERIAL ADAPTER @ 3
OA-1453-0035 DCS SOFTWARE CD @ 1
OA-1177-0278 RS232 SS LANTRONIX BOX @ 1
W-1343 RJ45 10BASE NETWORK CABLE @ 3
OA-1374-0050 6' DB9M-DB25M, RS232 @ 1

-IF MORE THAN 8 LANES ARE REQUIRED, OR MORE THAN 1 BUTTON PER LANE, OA-1240-0010 MAY BE REPLACED WITH OA-1240-0016 ***NOTE: IF OA-1240-0016 IS USED, BUTTON INTERFACE MUST BE AT THE SAME LOCATION AS THE OMNISPORT 2000. ORDER THE NUMBER OF BUTTONS NEEDED.

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PROJ:OMNISPORT 2000 TIMER			
TITLE:SYSTEM RISER: TRACK M3 MATRIX W/ OMNI2K IN PRESSBOX			
DESIGN:SBRINK		DATE: 27 OCT 11	
SCALE:NONE			
SHEET	REV	JOB NO:	FUNC-TYPE-SIZE
	00	P1240	R-01-B 1072146

