

Libra Positional Data Streaming Box Manual

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Date	Version	Author	Comments
August 6, 2010	001	Larry Madore	Initial version
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TABLE OF CONTENTS

1. INTRODUCTION	4
1.1. HARDWARE CONNECTION:	4
1.2. SOFTWARE SETUP:	4
2. RUNNING THE LIBRA PSDB	6
2.1. SHUTTER PULSE – RECORD OR PLAYBACK	6
2.2. SHUTTER PLUSE – NO RECORD OR PLAYBACK	7
2.3. NO SHUTTER PULSE – NO RECORD OR PLAYBACK	8
2.4. TIME CODE	9
3. PROGRAMMING	10
3.1. HARDWARE	10
3.2. SBLX PROGRAM SETUP	10
3.3. PROGRAMMING THE LIBRA POSITIONAL DATA STREAMING BOX	10
3.4. PROGRAMMING COMPLETE	11

1. Introduction

This document describes the function and setup to use the **Libra Positional Data Streaming Box (PDSB)**. 2 steps will need to be completed to use this package effectively. The 2 steps are described below;

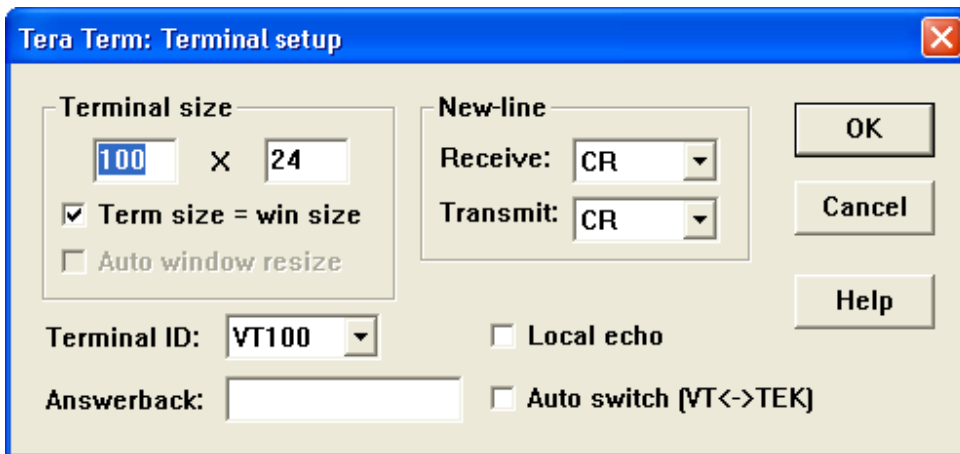
1.1. Hardware Connection:

- a. Connect the **Libra Positional Data Streaming Box** between the Libra Console and the Libra Tilt Head using Libra Data cables.
- b. Power up the Libra units. On the **Libra Positional Data Streaming Box** you should see a Power LED (green) and either a flashing Data LED (blue) or a Flashing Error LED (red).
- c. Flashing Data LED indicates the presence of positional data from the Libra Tilt Head back to the Libra Console.
- d. An Error LED indicates no data present.
- e. Connect your PC to the **Libra Positional Data Streaming Box** using a standard RS-232 cable. (9 pin male to female cable)

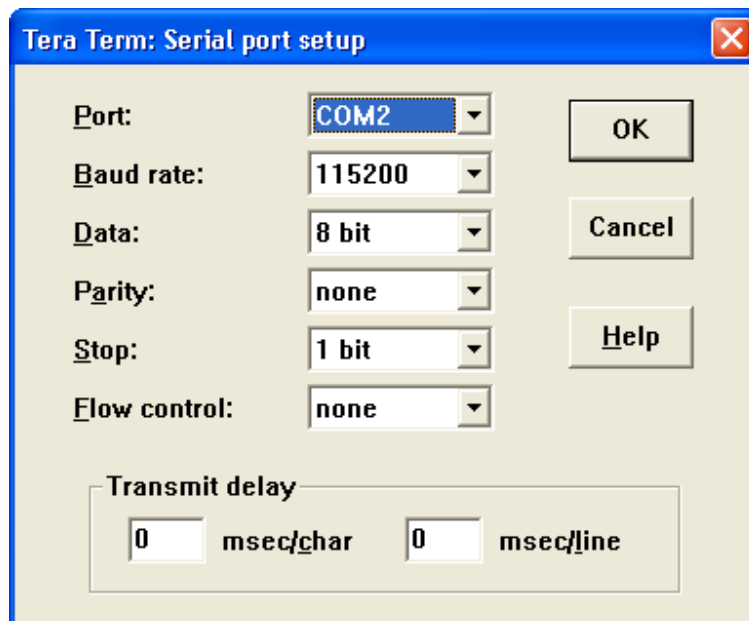
1.2. Software Setup:

- a. To display the positional data from the **Libra Positional Data Streaming Box** you will need a flexible terminal emulator. The one we recommend is Tera Term available from Vector.co.jp at;
<http://hp.vector.co.jp/authors/VA002416/teraterm.html>
- b. For a PC with Windows 95/2000/XP/Vista or Win7 select Tera Term Pro ver. 2.3 for Windows 95/NT. Download and follow the instructions to unzip and install Tera Term.

- c. Once Tera Term is installed and running set the following items in the 'Setup' menu as described below;
 - i. 'Terminal' – For best display width.



- ii. 'Serial port' – Select your PC's 'Com Port'.



- d. When you have made these changes select 'Save setup' in the 'Setup' menu.

2. Running the Libra PSDB

Plug in all of the cables and start up Tera Term as above. On Tera Term you should see one of the following data sets streaming in.

2.1. Shutter Pulse – Record or Playback

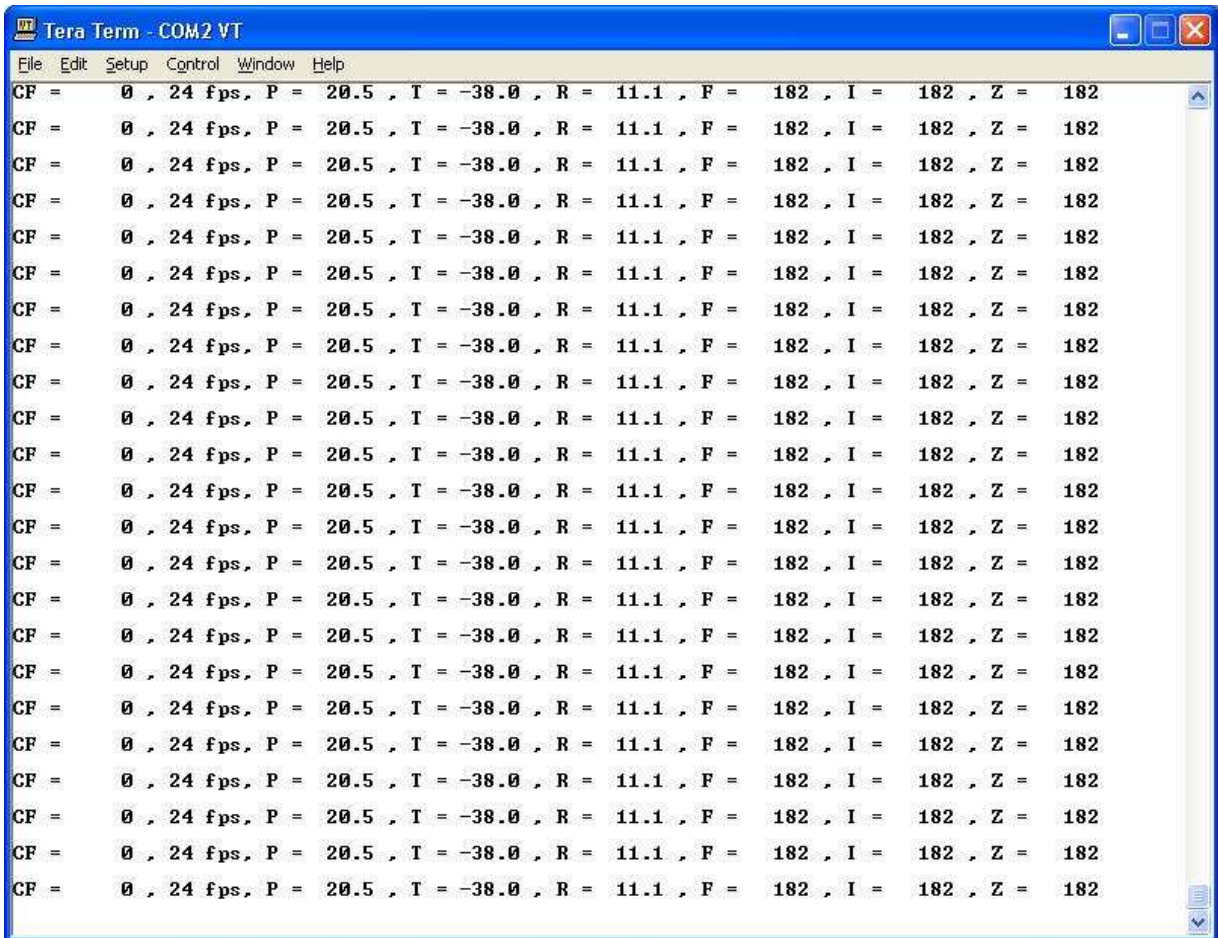
In this case the Libra is receiving a Shutter Pulse at 24 frames per second. The Libra is also either recording or playing back a motion control move because we see the Camera Frame number is incrementing. The Camera Frame number will only commence incrementing once a record or playback is triggered and CF = 1 will correspond with the bloop light trigger.

```

Tera Term - COM2 VT
File Edit Setup Control Window Help
CF = 308 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 309 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 310 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 311 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 312 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 312 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 314 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 314 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 315 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 316 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 317 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 318 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 319 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 320 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 321 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 322 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 323 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 324 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 325 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 326 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 327 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 328 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
CF = 329 , 24 fps , P = 20.5 , T = -38.0 , R = 11.1 , F = 182 , I = 182 , Z = 182
    
```

2.2. Shutter Pulse – No Record or Playback

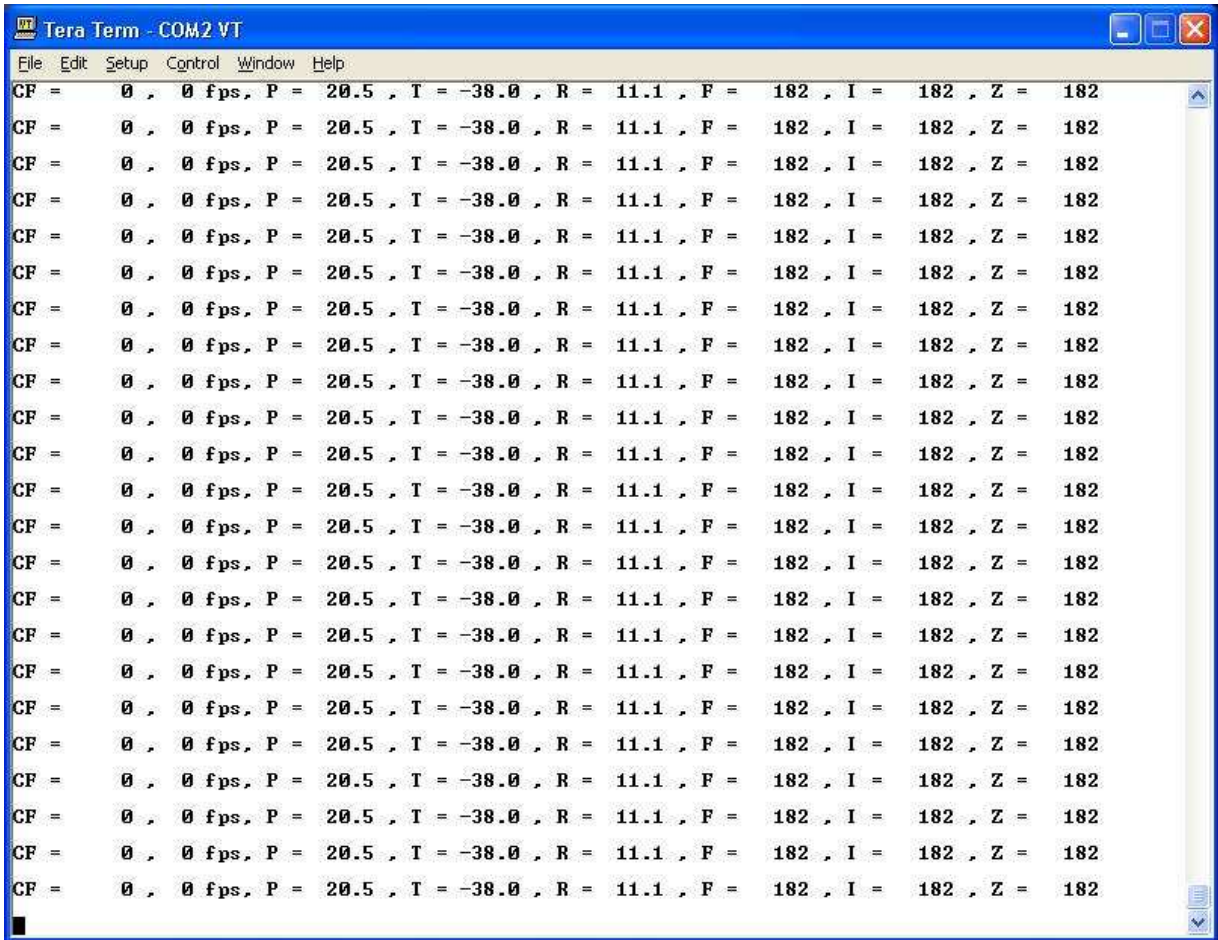
In this case there is a Camera Shutter Pulse present running at 24 fps. Each line of streamed data is synced at 24 frames per second to the shutter pulse. The Camera Frame number is set to 0 because the Libra Head is not currently recording or playing back a motion control move. The Camera Frame number will only commence incrementing once a record or playback is triggered and CF = 1 will correspond with the bloop light trigger.



2.3. No Shutter Pulse – No Record or Playback

In this case the Libra is not seeing either a Camera Shutter Pulse or Time Code Data coming in. The Frame Rate is this 0 fps and the Camera Frame number inconsistently set to zero.

In this mode the data streamed out is not synced to anything but can be useful because there is still an indication of Positional data as in a stream format that one can obtain Tilt, Roll, Focus, Iris, Zoom.



2.4. Time Code

In this case we can see that there is Camera Timecode being put into the Libra Head because the Camera Frame number and Camera Frame Rate fields have been replaced with a single data field that indicates the Timecode. The time code is read as Hours: Minutes: Seconds: Frames.

```

Tera Term - COM2 VT
File Edit Setup Control Window Help
13:27:12:13 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:14 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:15 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:16 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:17 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:18 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:19 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:20 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:21 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:22 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:12:23 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:00 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:01 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:02 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:03 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:04 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:05 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:06 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:07 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:08 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:09 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
13:27:13:10 P = 20.4 , I = -47.7 , R = 19.0 , F = 182 , I = 182 , Z = 182
    
```

3. Programming

Loading Upgrade Software into Libra Positional Data Streaming Box

3.1. Hardware

Plug one end of the serial cable into the serial connector (DB9 Male) of your computer and the other end into the **Libra Positional Data Streaming Box (PDSB)**.

3.2. SBLX Program Setup

- a. Open the **SBLX.exe** program once it is on your computer.
- b. Set the **Comms Port** to the serial port you chose, most likely **COM 1**.
- c. Set the **Baud Rate** to **115200**.
- d. Click on **File** in **Encrypted Source File** and select the provided .cry file.
i.e. `Libra_Positional_Reference_Rev_D.cry`

3.3. Programming the Libra Positional Data Streaming Box

- a. Select **Capture Target**.
- b. Power up the **Libra PDSB** by plugging in the 6 pos KPT cable from the Libra Head.
- c. On the **Libra PDSB** press in the button.
- d. Wait until the following shows up in the **Programmer Status:** section then release the button.

Target Status: 4000
 in loader mode

- e. Quickly (within 10 seconds) select the **Capture Target** button in the SBLX program.
- f. Then select the Program **PIC button**. In the **Target Response:** section you should see streaming data much the data below.

```
14:44:46 !3000041704400071
14:44:46 !3000041804400070
14:44:46 !300004190440006F
14:44:46 !3000041A0440006E
etc.
```

and then 10 – 20 sec. you should see it end with.

```
14:44:49 !300004790440000F
14:44:49 PIC programming done
14:44:49 !3000047A04400806
```

3.4. Programming Complete

- a. Remove the serial connector from the **Libra PDSB**.
- b. Repeat **step 3** after you have plugged in another **Libra PDSB** if you are programming more than 1. Otherwise dismantle the rest of the units.