

September 2010

## **RibEye™ Multi-Point Deflection Measurement System Software Release Notes - Version 2.1**

### **RibEye Software version 2.1 has the following new features and changes:**

1. Fixed bug introduced in version 2.0 that corrupted the LED/ISO code display table for the WorldSID
2. Controls on the live display screen were not displayed when disconnecting from one model of RibEye and then connecting to another type of RibEye
3. The RibEye Software User's Manual has been updated to version 2.1 from 1.8

This software will work with all RibEye models including the 5<sup>th</sup> Female, 50<sup>th</sup> Male, 3-D 50<sup>th</sup> Male, SIDIIs, Polar, and WorldSID that currently use earlier versions of the PC software. RibEye models that use a web page user interface will need to have upgraded firmware installed to use the PC software.

The RibEye 2.1 Installer will install the new version of the software in a new directory (C:\Program Files\RibEye 2.1) and will not overwrite previous versions.

### **RibEye Software version 2.0 has the following new features and changes:**

1. Added support for Windows 7 and Windows Vista
2. Fixed importing existing Ballistic RibEye files for replotting
3. Added support for special 50<sup>th</sup> Male RibEye firmware to allow the user to mount any LED on any rib, as described below.

#### **INSTRUCTIONS FOR 50<sup>TH</sup> MALE ADJUSTABLE-LED 2-AXIS RIBEYE**

Special firmware is available for the 50<sup>th</sup> Male, 2-axis RibEye that allows the user to put any LED on any rib. The user may also place multiple LEDs on a rib. Special LED mounts are available that attach the LEDs to the rib stiffener bars in addition to the normal LEDs that attach to the ribs with nylon zip ties. Figure 1 shows the LEDs mounted to the rib stiffener bars. The LEDs mount to the stiffeners with angled mounting plates so that the left LEDs are angled toward the right side of the dummy, and the right LEDs are angled toward the left side of the dummy.

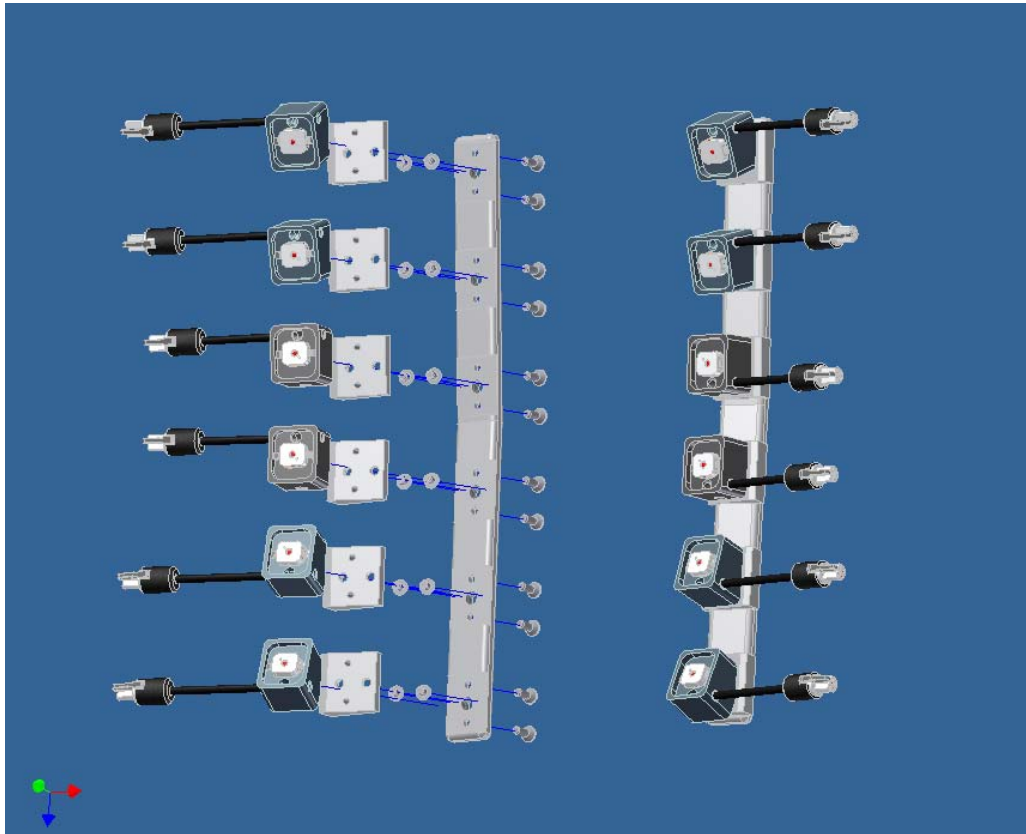


Figure 1. LEDs attached to rib stiffener bars

When running the special firmware, the “RibEye Type” box will display “50<sup>th</sup> ADJ.”

**IMPORTANT:** To use the capabilities of the firmware, RibEye Software version 2.0 or greater is required.

The 2-axis 50<sup>th</sup> Male RibEyes use different calibration curves to process the data for each rib. Therefore, the RibEye must know which rib each LED is located on. When the RibEye software connects to a “50<sup>th</sup> ADJ” RibEye, the LED position and ISO codes table will have dropdown boxes on the RIB and POSITION columns as shown in Figure 2.

LED	RIB	POSITION	ISO CODES	X (mm)	Y (mm)
1	1	LEFT RIB	1 1 RIBS 01 LE H3 DS X/Y	105.7	-44.2
2	2	LEFT RIB	1 1 RIBS 02 LE H3 DS X/Y	105.8	-44.1
3	1	LEFT RIB	1 1 RIBS 03 LE H3 DS X/Y	105.9	-44.0
4	2	LEFT RIB	1 1 RIBS 04 LE H3 DS X/Y	105.8	-43.9
5	3	LEFT RIB	1 1 RIBS 05 LE H3 DS X/Y	105.8	-43.9
6	4	LEFT RIB	1 1 RIBS 06 LE H3 DS X/Y	105.8	-43.9
	5				
	6				

LED	RIB	POSITION	ISO CODES	X (mm)	Y (mm)
1	1	LEFT RIB	1 1 RIBS 01 LE H3 DS X/Y	105.7	-44.2
2	2	LEFT RIB	1 1 RIBS 02 LE H3 DS X/Y	105.8	-44.1
3	3	LEFT RIB	1 1 RIBS 03 LE H3 DS X/Y	105.9	-44.0
4	4	LEFT STERNUM	1 1 RIBS 04 LE H3 DS X/Y	105.8	-43.9
5	5	RIGHT RIB	1 1 RIBS 05 LE H3 DS X/Y	105.8	-43.9
6	6	RIGHT STERNUM	1 1 RIBS 06 LE H3 DS X/Y	105.8	-43.9

Figure 2. Dropdown boxes for the RIB and POSITION columns

Any of the 6 ribs can be selected for any LED. Rib 1 is the top rib, and Rib 6 is the bottom rib. The positions can be set to Left or Right, and Rib or Sternum as shown in Figures 2 and 3. Note that the ISO codes change with the RIB and POSITION settings.

LED	RIB	POSITION	ISO CODES	X (mm)	Y (mm)
3	3	LEFT RIB	1 1 RIBS 03 LE H3 DS X/Y	105.9	-44.0
4	3	LEFT STERNUM	1 1 STRN 03 LE H3 DS X/Y	105.8	-43.9
5	6	LEFT RIB	1 1 RIBS 06 LE H3 DS X/Y	105.8	-43.9
6	6	LEFT STERNUM	1 1 STRN 06 LE H3 DS X/Y	105.8	-43.9
7	1	RIGHT RIB	1 1 RIBS 01 RI H3 DS X/Y	105.8	56.1
8	1	RIGHT STERNUM	1 1 STRN 01 RI H3 DS X/Y	105.9	56.0

Figure 3. RIB and POSITION changed

When any of the RIB or POSITION entries are changed, the “Save LED Setup to RibEye” and the “Cancel LED Setup Changes” buttons will appear. When you have finished configuring the LEDs you must either save the settings or cancel them. When you click on the “Save LED Setup to RibEye” button, the LED setup data will be written to the RibEye flash memory. The next time you connect to the RibEye, the software will read the LED settings from the RibEye flash memory and set up the LED table with the correct data. If you click on the “Cancel LED Setup Changes” button, the changes will be cancelled, and the table will be reset to its last state.

**WARNING:** Make sure that the LEDs are mounted on the rib you have specified in the table to prevent the RibEye from using the wrong calibration curves.

Note that the “Download Data” button will be grayed out and inoperable while you are editing the LED table and while the “Save LED Setup to RibEye” and “Cancel LED Setup Changes” buttons are visible.

If you put more than two LEDs on either side of the ribcage you will have duplicate channel ISO codes for some channels. In this case, you can look at the absolute data from the RibEye to determine the initial location of each of the LEDs.

This software will work with all RibEye models including the 5<sup>th</sup> Female, 50<sup>th</sup> Male, 3-D 50<sup>th</sup> Male, SIDIIs, Polar, and WorldSID that currently use earlier versions of the PC software. RibEye models that use a web page user interface will need to have upgraded firmware installed to use the PC software.

The RibEye 2.0 Installer will install the new version of the software in a new directory (C:\Program Files\RibEye 2.0) and will not overwrite previous versions.

**RibEye Software version 1.8 has the following new features and changes:**

1. Added support for the 3-axis version of the Hybrid III 50<sup>th</sup> Male.
2. Changed the ISO code format to include the dummy type and the standard rib names, such as shoulder, thoracic, and abdominal. The ISO codes are in the format

A B CCCC DD EE FF GG H I

and are defined in the table below. For more information see ISO/TS 13499 - RED B : 2007 E , Version 1.5

Letters	ISO Definition	Options
A	Test Object	can be defined by the user, typically: 1 = vehicle 1 2= vehicle 2 3 = vehicle 3 S = sled etc
B	Position	standard seating positions 0-9
CCCC	Main Location	typically the rib name or sternum for frontal dummies: RIBS or STRN for sternum for side impact dummies: SHRI – shoulder rib THRI – thoracic rib ABRI – abdominal
DD	Fine Posn 1	the rib number such as 01, 02, 03 or a position code such as: UP – upper, MI – middle, LO – lower
EE	Fine Posn 2	a position code such as: UP – upper, MI – middle, LO – lower, LE – left RI – right, OU – outer, FR – front, RE – rear

FF	Fine Posn 3	the dummy type such as: S2 – SIDIIs WS – WorldSID H3 – Hybrid III 50 <sup>th</sup> Male HF – Hybrid III 5 <sup>th</sup> Female PE – Polar BA – Ballistic SIDIIs for vest/weapons testing
GG	Dimension	always DS for displacement
H	Direction	X, Y or Z
I	Filter Class	0 – unfiltered A – CFC1000 B – CFC600 C – CFC180 D – CFC60

**RibEye Software version 1.7 has the following bug fixes:**

1. Demo display colors did not match the ribs, they were off by one
2. Demo display axes fixed for Ballistic RibEye
3. Array sizes fixed for Ballistic RibEye

**RibEye Software version 1.6 includes the following new features:**

1. Data can be exported in Diadem and ISO formats as well as spreadsheet compatible Comma-Separated Variable (CSV) format.
2. Exported data can be filtered using the standard NHTSA Phaseless Butterworth filter at class 60, 180, 600, and 1000, as well as unfiltered.
3. Exported data can be zeroed (change in positions) or absolute (position with respect to the RibEye origin).
4. Data stored in any of the formats can be read back in for viewing or re-exporting in a different format.
5. The screen plots can be viewed as absolute or relative data.