

# Data Transfer and Firmware Utility, Differential to Absolute Vacuum System Conversion, and Fixture File Information





For use with Resodyn LabRAM I and LabRAM II Series.



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# **Revision (Installation and Update Information)**

Revision	Update/Description	Version/Date



#### 1. Introduction

The LabRAM I and II series of Resodyn Acoustic Mixers store data in internal memory. In order for the user to transfer and view this stored data, a custom Windows Application, referred to as RAM Tools is required. RAM Tools synchronizes LabRAM I and II data with storage on a Windows PC. Additionally, the application can "flash" updated operating firmware to the LabRAM I and II. RAM Tools is a lightweight Windows application that can run on Windows 10, Windows 8, or Windows 7.



**NOTE:** <u>Administrator login</u> is required for RAM Tools installation and USB driver installation

The LabRAM II and PharmaRAM II can be equipped with an optional vacuum control system to optimize mixing operations. Resodyn Acoustic Mixers recently upgraded all vacuum control modules to use "absolute" measurement systems. The previous generation of vacuum control modules used "differential" measurement systems. Differential measurement systems use the ambient air pressure as the measurement reference, whereas absolute measurements systems use an internal reference that is at a very low pressure (high vacuum). The purpose of transferring to absolute measurement was to allow mixing recipe transference between locations with different ambient air pressures due to altitude variation.

Software re-configuration is required for older LabRAM II and PharmaRAM II systems (machines sold before July 15, 2019) to operate with the new absolute vacuum control modules. RAM Tools version 4.0.3 and newer is required along with firmware version 4.9.4 and newer.

The second generation of Resodyn Acoustic Mixer (RAM), which includes the LabRAM I, LabRAM II, LabRAM II H, and PharmaRAM II, can be fitted with a number of different mixing containers and fixtures to secure the aforementioned containers to the mixer mounting plate. In order for optimal operation, the RAM mixer needs to "know" what container and fixture will be used for a mixing operation before the mix starts. The information about the container and fixture are stored in what is referred to as a fixture file. These fixture files define:

- Starting frequency
- Minimum/maximum frequency
- Maximum acceleration
- Maximum vacuum
- Minimum/maximum temperatures

The fixture file information is used to provide quick response to the desired operation set points, as well as provide supervisory operation with standard and custom fixtures. Fixture files are selected for a mixing operation by "linking" with what is referred to as a *Configuration* in the HMI software. The fixture file needs to be selected from the RAM's HMI screen before operation when a different fixture has been installed on the machine. The fixture file is the user's method of "informing" the RAM system with what fixture and vessel is attached to the payload plate.



# 2. Data Transfer and Firmware Utility

#### 2.1. RAM Tools Installation

- 1. Insert the installation media into the Windows PC.
- 2. Double-click "setup" or "setup.exe."



**NOTE**: The UAC dialog appears prompting for Administrator credentials. After credentials are provided, the RAM Tools installer will start, and the Setup Wizard dialog box appears.

3. Click Next>.

**NOTE**: The "Confirm Installation" dialog box appears.

4. Click <u>N</u>ext>.



**NOTE**: The installer will run, and Installation Complete dialog box appears.

5. Click <u>C</u>lose.

**NOTE**: The RAM Tools application installation is now complete.



# 2.2. Driver Installation for USB Connection to PC

**NOTE**: In order to obtain the files from the LabRAM I and II, a USB driver must be installed on the Windows PC. Administrator login is required to accomplish this task.

**NOTE**: A Mini USB cable is required to plug into the back of the LabRAM I and II, and a standard USB connection for the PC. The USB connector is highlighted in yellow on the image to the right.

- 1. Find the USB connection on the back of the LabRAM I or II.
- 2. Plug the USB cable into the LabRAM I or II and then into an available USB connector on a Windows PC.
- 3. Apply power to the LabRAM I or II.





#### 2.3. Windows 10, 64-bit Driver Installation

A driver folder named "v1.2.3.25 - LR1\_and\_LR2\_USB\_Driver\_Windows10\_x64" is included with the RAM Tools installation folder. This driver will only works for 64-bit (x64) Windows 10.

1. Type Device Manager in the search bar and select it above.

- 2. Under Other devices, find the LabRAM1 Bulk, LabRAM2 Bulk, or LabRAM2H Bulk.
- 3. Right click on it and select Update driver.

4. Select →Browse my computer for driver software.





- 5. Navigate to the location where you saved the driver package (downloaded from the Installation Media) and select folder.
- 6. Click Next.

**NOTE**: The screen to the right will appear if the driver installation was successful.





#### 2.4. Windows 8 Driver Installation

NOTE: Step 1 dictates which driver is selected.

- 1. Identify whether your PC is 32-bit (x86) or 64-bit:
  - a. Swipe in from the right edge of the screen and tap Search.
  - b. Type "system" in the search box, and then tap or click Settings.

**NOTE**: If the PC is running a 64-bit version of Windows 8, "64-bit Operating System" is displayed in the "System type" field under the "System" heading. If the PC is running a 32-bit version of Windows 8,"32-bit Operating System" is displayed in the "System type" field under the "System" heading.

1. Turn power on to the LabRAM I and II.

**NOTE**: At this point the Window PC will try to find a suitable driver for the LabRAM I and II.

- 2. Press Close to close/cancel any attempts by the operating system to find a suitable driver.
- 3. Right click on the Start button Window icon and select Device Manager.





**NOTE**: "LabRAM2 Bulk" icon should be located under "Other Devices."

- 4. Right click on "LabRAM2 Bulk."
- 5. Select "Update Driver Software."

6. Select "→Browse my computer for driver software."

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How	v do you want to search for driver software?	
•	Search automatically for updated driver software Windows will search your computer and the internet for the latest driver softs for your device, unless you've disabled this feature in your device installation settings.	vare
•	Browse my computer for driver software Locate and install driver software manually.	
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	pdate Driver Software - LabRAM2 Bulk	
	pdate Driver Software - LabRAM2 Bulk wse for driver software on your computer	
Brov	wse for driver software on your computer	
Brov Search C:\	wse for driver software on your computer	it
Brov Search C:\ Inc	wse for driver software on your computer h for driver software in this location:	

- 7. Browse to the "Driver" folder on the installation disk.
- 8. For 64-bit versions of Windows 8, select the Driver\bin\wlh\x64 folder.
- 9. For 32-bit versions of Windows 8, select the Drivers\bin\wlh\x84 folder.







**NOTE**: Driver installation is complete. "LabRAM2 Mixer USB Driver ...." should now be visible under "Universal Serial Bus controllers" group in the Device Manager.



# 2.5. Windows 7 Driver Installation

**NOTE**: Step 1 (See 2.4 – Windows 8 Driver Installation) dictates which driver is selected.

- 1. identify whether your PC is 32-bit (x86) or 64-bit (x64):
  - a. Click Start 🗐.
  - b. Type system in the Start Search box.
  - c. Click System in the Programs list.

**NOTE**: For a 64-bit version operating system, "64-bit Operating System" appears for the "System type" under System. For a 32-bit version operating system, "32-bit Operating System" appears for the "System type" under System.

2. Turn power on to the LabRAM I and II. **NOTE**: At this point the Window PC will try to find a suitable driver for the LabRAM I and II.

- 3. Close/cancel any attempts by the operating system to find a suitable driver.
- 4. Click Start in the task bar.



- 5. Right click on Computer and select "Manage."
- 6. Supply administrator credentials or click yes on the UAC dialog box that appears.

**NOTE**: From this point forward, the installation process for Windows 7 is identical to that explained in the section 0 (Windows 8). Please follow steps 4 through 13 in that section to complete driver installation



#### 2.6. RAM Tools

1. Launch RAM Tools from the Resodyn Acoustic Mixers group.

**NOTE**: The application uses a simple tab format layout, showing four tabs: "Log File Sync", "Firmware", "Fixtures", and "Miscellaneous".

The "Log File Sync" tab is used to copy files from the LabRAM I and II, convert them and then view them in RAM Viewer.

The "Firmware" tab is used to update the operation firmware of the LabRAM I and II.

The "Fixtures" tab is used to view and upload fixture files to the LabRAM I and II.

The "Miscellaneous" tab is used to modify the configuration of the LabRAM I and II.

At the top of the window, the Connected/Disconnected message indicates connection status to the machine.

<b>P A</b>	d			
	nware Fixture	s Miscellaneous		
Sync Folder				
Serial Number: R	700000000			
	Sync Stat	ue: Idle		
Sync Log Files		us. iule		
Sync Log Files				
	Convert S	tatus: Idle		
Convert Log File	s			
Start F	AM Viewer			

To perform any activities with RAM Tools, verify the message is green and says "**Connected**" as shown to the right.

# 2.7. RAM Tools – File Synchronization, Conversion, and RAM Viewer



1. Select a destination directory on the Windows PC to store the log files by clicking the "..." button to the right of the "Sync Folder" textbox.

2. Click the "Sync Log Files" button to begin the synchronization process.

NOTE: All new/updated files on the
LabRAM I and II will be copied to the
destination folder in a sub-folder called
"Raw Log Files." Depending on file size,
synchronization can take several
minutes.

When the process is complete, the message above the progress bar will read "Sync Status: Done" (see image to the right). Note that these files are not in a format that is compatible with RAM Viewer and must be converted.

💥 RAM Tools v4.0.4	-	×
Connected		
Log File Sync Firmware Fixtures Miscellaneous		
Sync Folder		 
Serial Number: R70000000		
Sync Status: Idle		
Sync Log Files		
Convert Status: Idle		
Convert Log Files		
Start RAM Viewer		
X RAM Tools v4.0.4	_	×
		 ~
Connected Log File Sync Firmware Fotures Miscellaneous		
Sync Folder		
C:\Users\RAM_Mix_Lab\Desktop\LabRAM1		
Serial Number: R700000000		
Sync Status: Idle		
Sync Log Files		
Convert Status: Idle		
Convert Log Files		
Start RAM Viewer		
X RAM Tools v4.0.4	_	X
		 ~
Connected Log File Sync Firmware Fixtures Miscellaneous		
Sync Folder		
C:\Users\RAM_Mix_Lab\Desktop\LabRAM1		
Serial Number: R70000000		
Sync Status: Done		
Sync Log Files		
Convert Status: Idle		
Convert Log Files		
Convert Log Files		
Convert Log Files		
Convert Log Files		



3. To convert the raw log files into a RAM Viewer compatible format, click the "Convert Log Files" button.

**NOTE**: Again, only files that need to be updated will be created/modified. This process may also take several minutes depending on file sizes. When the conversion process is complete, the message above the progress bar will read "Sync Status: Done."

🛠 RAM Tools v4.0.4	_	×
Connected		
Log File Sync Firmware Fixtures Miscellaneous		
Sync Folder		
C:\Users\RAM_Mix_Lab\Desktop\LabRAM1		
Serial Number: R700000000		
Sync Status: Done		
Sync Log Files		
Convert Status: Idle		
Convert Log Files		
Start RAM Viewer		
% RAM Tools v4.0.4		×
		×
% RAM Tools v4.0.4 Connected	-	×
	-	×
Connected	-	×
Connected Log File Sync Firmware Fixtures Miscellaneous	-	×
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Connected Ug File Sync Fintware Flatures Miscellaneous Sync Folder C:\Users\RAM_Mix_Lab\Desktop\LabRAM1 Serial Number: R700000000 Sync Log Files Convert Status: Done Convert Sta		

#### 2.8. RAM Viewer

1. To view the data in RAM Viewer, click the "Start RAM Viewer" button.

**NOTE:** If this button is disabled and reads "PLEASE INSTALL RAM VIEWER," then RAM Viewer has not yet been installed on your computer and, therefore, cannot yet be used.

Connec	ted					
.og File Sync	Firmware	Fixtures	Miscellaneous			
Sync Folder						
C:\Users\RA	M_Mix_Lab	\Desktop	LabRAM1			
Serial Numbe	D.700000					
Senal Numbe						
		ync Status	: Done			
Sync Log I	Files					
o		onvert Sta	us: Done			
Convert Log	Files					
_						
St	art RAM Vie	ewer				



2. If installed, RAM Viewer will start and will be pointed to the directory where the converted files are located. At this point, RAM Viewer can be operated normally. To access, download, and save the file of interest, select the date of the batch file.

NOTE: The available batch files appear in the lower window.



Back

Min: 0

Export to CSV

Close Viewe

RAM Data Viewer v2.12.0

Mix Log Dates: (change sorting)

NOTE: The "Plot Historical" button will activate to allow a graphic view of the data.

The "Export to CSV" button will also be activated. Clicking this button opens the "Save As" dialog box. The selected file can then be saved to the preferred location.

 $\times$ 



# 2.9. RAM Tools – Firmware Update

**NOTE**: RAM Tools is also used to update firmware on the LabRAM I and II series of mixers. Resodyn Acoustic Mixers will need to provide a file with a \*.cyacd file extension to execute a firmware update. In RAM Tools, click on the "Firmware" tab.

1. To begin the firmware update, click the "Update Firmware" button.

Connected Log Fie Sync Fimmare Fatures Miscelaneous Bootloader Disconnected Update Fimmare Load File Program Status Log	🛠 RAM Tools v4.0.4	-		ı x
Sinc Log Files Convert Log Files Start RAM Viewer Start RAM Viewer Start RAM Viewer RAM Tools v4.0.4 – – × Connected Update Fimware Load File Program Status Log Status Log Connected Update Fimware Load File Program Status Log Connected Update Fimware Load File Program Load File Program Load File Program	Log File Synce Firmware butures Miscellaneous Sync Folder			
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Cog File Sync Firmware       Bootloader Disconnected         Update Firmware       Load File         Status Log       •         % RAM Tools v4.0.4       -       ×         Disconnected       •       ×         Disconnected       •       •         Firmware       •       •       ×         Disconnected       •       •       •         •       •       •       •       •         •       •       •       •       •         •       •       •       •       •       •         •       •       •       •       •       •       •         •	X RAM Tools v4.0.4	-		×
Disconnected Fimware Bootloader Connected Update Fimware Load File Program	Log File Sync Firmware Rutures Miscellaneous Bootloader Disconnected Update Firmware Load File		Progra	am V
Firmware Bootloader Connected Update Firmware Load File Program	🛠 RAM Tools v4.0.4	-		I X
	Firmware Bootloader Connected Update Firmware Load File		Progra	am V

**NOTE**: The top connection message changes to the color red and reads "**Disconnected.**" The connection message in the "Firmware" tab changes from red to green and reads "**Bootloader Connected.**"



2. Click the "Load File" button and browse to the \*.cyacd provided by Resodyn Acoustic Mixers.

**NOTE**: The file path appears in the text box.

💥 RAM Tools v4.0.4		– 🗆 X
Disconnect	ed	
Firmware		
Bootloade	r Connected	
Update Firmw	vare	
		Load File Program
Status Log		
		<u>^</u>
		~ · · · · ·
🕺 Open Bootloader Firmwa	re Update File	×
← → ~ ↑ □ > Th		✓ ♂ Search Desktop
Organize - New fold		
	A	
3D Objects ^ Desktop	Name	Date modified Type
Documents	Basement LR2 Backup Basement LR2 Backup 29jul19	8/1/2019 12:58 PM File folder 7/26/2019 4:47 PM File folder
Downloads	junk	7/29/2019 11:15 AM File folder
Music	LabRAM1	11/18/2019 11:25 File folder
Pictures	RW3	11/14/2019 9:45 AM File folder 7/30/2019 1:49 PM CYACD File
Videos	RAMware3 - Shortcut	5/16/2018 3:10 PM Shortcut
BLACK FLASH (E		
BLACK FLASH (E:)		
RAM Tools Scre		
		>
File <u>n</u>	ame: LR2_v4_9_4.cyacd	✓ cyacd file (*.cyacd) ✓
		<u>O</u> pen Cancel
💥 RAM Tools v4.0.4		– 🗆 ×
Disconnect	ed	
Firmware	-	
Bootloade	er Connected	
Update Firmw	vare	
C:\Users\RAM_Mix_	Lab\Desktop\LR2_v4_9_4.cyacd	Load File Program
Status Log		
Status Log		<u>^</u>
		~



3. Click "Program" to flash the new firmware to the LabRAM I and II.

**NOTE**: The mix chamber light will turn off (if applicable) and the HMI screen displays "HMI Comms Failure" in the status bar. This is the correct behavior.

**NOTE**: Status messages are displayed in the "Status Log" text field. The progress bar gradually fills with the color green while updating. This process takes approximately one minute.

**NOTE**: When complete, a "Bootload ended at..." message displays in the "Status Log" textbox and the top connection message changes back to a green-colored "Connected" and the lower message changes to "Bootloader Disconnected".

💥 RAM Tools v4.0.4		_		Х
Disconnected				
Firmware				
Bootloader Connected				
Update Firmware		_		
C:\Users\RAM_Mix_Lab\Desktop\LR2_v4_9_4.cyacd	Load File		Program	
Status Log				
			^	]
			~	
💥 RAM Tools v4.0.4		_		×
Disconnected				
Firmware				
Bootloader Connected				
Update Firmware				
C:\Users\RAM_Mix_Lab\Desktop\LR2_v4_9_4.cyacd	Load File		Program	
Status Log Bootload Started at 11/18/2019 11:29:43 AM			~	1
			~	
8.4				
💥 RAM Tools v4.0.4		-		×
Connected				
Log File Sync Firmware Fixtures Miscellaneous				
Bootloader Disconnected				
Update Firmware				
C:\Users\RAM_Mix_Lab\Desktop\LR2_v4_9_4.cyacd	Load File		Program	
Status Log				_
Bootload Started at 11/18/2019 11:29:43 AM Bootload successful !!			^	
Bootload ended at 11/18/2019 11:31:23 AM				
			~	



# 3. Differential to Absolute Vacuum System Conversion

#### 3.1. Procedure

- Power up the LabRAM II or PharmaRAM II (delivered before July 15, 2019) and check the firmware version. This is the number at the topright corner of the LabRAM II or PharmaRAM II LCD screen. Firmware v4.9.4 or higher is required for differential to absolute vacuum system conversion. If the firmware version is lower than v4.9.4, then the firmware will need to be upgraded, per the RAM **Tools – Firmware Update** section.
- 2. After verifying firmware version (or updating firmware), click on the Miscellaneous tab.

Cont	rols	<u>I</u> 1	ndicato	ors	
Sel Rec			eleration: Power: perature: Vacuum:	0.0 0	g % C inHg
Recipe		N	avigati	on	
Selected Recipe:		Login/ Logout	Mode	,	alarms
Recipe Status:		Setup/ Config	Viewer		
ogin: default	Status: Ready		A	larm	19:24:47

💥 RAM Tools v4.0.4	-	×
Connected		
Log File Sync Firmware Fixtures Miscellaneous		
Sync Folder		
C:\Users\RAM_Mix_Lab\Desktop\LabRAM1		
Serial Number: R70000000		
Sync Status: Idle		
Convert Status: Idle		
Convert Log Files		
Start RAM Viewer		
💥 RAM Tools v4.0.4	-	×
Connected		
Log File Sync Firmware Fixtures Miscellaneous		
File Management Control		
Load Alarms Upload Files Reset Mixer		
Download Files Options		
- Units		
Units On Off		
Existing: °C Change To: °C		
Vacuum Existing: inHg		
Change To: inHg ~		
Change Units		

3. Backup the existing configuration by clicking on the Upload Files button.



4. The backup procedure typically takes less than one minute. Status is indicated at the bottom of the application window.

- 5. When the backup procedure is complete, a File Explorer window will be displayed with the backup file (Recovery.Ir2fix). Copy this file to a safe place.
- 6. Select the absolute vacuum units that are preferred.
- NOTE: The options are torr or mbar.





7. Click the Change Units button.

8. A window appears prompting for acknowledgment before beginning the process. Click Yes to continue the conversion.

**NOTE**: The conversion process takes several minutes. Status is indicated at the bottom of the application window.

**NOTE**: Upon completion of the unit update, the LabRAM II or PharmaRAM II will be rebooted and RAM Tools will switch back to the first tab.

RAM Tools v4.0.4			_		×
onnected					
og File Sync Firmwa	are Fixtures Miscella	neous			
File Management		Control			
Load Alarms	Jpload Files	Reset Mixer			
Do	ownload Files				
20	Swilloud Files	Options Auto Logout			
Units		On Off			
Temperature					
Existing: °C Change To: °C	~				
Vacuum					
Existing: inHg					
Change To: torr	~				
Change	e Units				
Unit Conversio	on Acknowledge			×	
	you want to conve ollowing operatio	ert units on this machine? Th	is will		
-Download		e directory selected on the L	og File S	ync	
tab. -DELETE ALI	L LOG FILES ON TH	IE MIXER!!!			
		rectory selected on the Log les in the directory selected			
File Sync.				-	
-convert all	recipes and rixtu	res on machine to new units	•		
Are you sure y	you want to proce	ed?			
		Ver		-	
		<u>Y</u> es	N	0	
RAM Tools v4.0.4			-		×
onnected					
og File Sync Firmwa	are Fixtures Miscella	neous			
og File Sync Firmwa File Management	are Fixtures Miscella	neous Control			
File Management	are Fixtures Miscella Upload Files				
File Management		Control Reset Mixer			
File Management	Jpload Files	Control			
File Management U	Jpload Files	Control Reset Mixer Options			
File Management	Jpload Files	Control			
File Management U	Jpload Files	Control			
File Management Load Alams U Do Units Temperature Existing: 'C Change To: 'C Vacuum	Jpload Files	Control			
File Management Load Alams L Units Temperature Existing: "C Change To: "C Vacuum Existing: inHg	Jpload Files ownload Files	Control			
File Management Load Alams Units Temperature Existing 'C Change To: C 'Vacuum Existing: inHg Change To: torr	Upload Files	Control			
File Management Load Alams L Units Temperature Existing: "C Change To: "C Vacuum Existing: inHg	Upload Files	Control			
File Management Load Alams Luts Temperature Existing: 'C Change To: 'C Vacuum Existing: inHg Change To: tom Change To: tom	Upload Files	Control	δ)		
File Management Load Alams Luts Temperature Existing: 'C Change To: 'C Vacuum Existing: inHg Change To: tom Change To: tom	Upload Files	Control Reset Mixer Options Auto Logout On Off	5)		
File Management Load Alams Luts Temperature Existing: 'C Change To: 'C Vacuum Existing: inHg Change To: tom Change To: tom	Upload Files	Control Reset Mixer Options Auto Logout On Off	5)		
File Management Load Alams Luts Temperature Existing: 'C Change To: 'C Vacuum Existing: inHg Change To: tom Change To: tom	Upload Files	Control Reset Mixer Options Auto Logout On Off	5)		×
File Management Load Alama L Do Units Temperature Existing: 'C Change To: 'C Vacuum Change To: tem Please be patie RAM Tools v4.0.4	Upload Files	Control Reset Mixer Options Auto Logout On Off	3)		×
File Management Load Alama RAM Tools v4.0.4 Connected	upload Files	Control Reset Mixer Options Auto Logout On Off On Off Intervention Int	3)		×
File Management Load Alama RAM Tools v4.0.4 Connected	Upload Files	Control Reset Mixer Options Auto Logout On Off On Off Intervention Int	3)		×
File Management Load Alams Lud Alams Lunts Temperature Existing: 'C Change To: 'C Vacuum Existing: inHg Change To: tor Please be patie RAM Tools v4.0.4 Connected g File Sync], Fimwas Sync Folder	upload Files	Control Reset Mixer Options Auto Logout On Off	3)		×
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File Management Load Alama Load A	upload Files	Control Reset Mixer Options Auto Logout On Off	3)		×
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File Management Load Alams Luda Alams Luta Temperature Existing: "C Change To: "C Change To: tor Existing: inHg Change To: tor Please be patie RAM Tools v4.0.4 Onnected g File Sync] Fimwa Sync Folder C:\Usen\RAM_Mx_L Senal Number: R7000 Sync Log Files	upload Files	Control Reset Mixer Options Auto Logout On Off	3)		×
File Management Load Alams Luta Temperature Existing: 'C Change To: 'C Vacuum Existing: inHg Change To: terr Change To: terr RAM Tools v4.0.4 Connected ag File Sync Folder C:\Users\RAM_Mx_L Senal Number: R7000	Ipload Files winload Files winload Files unts eutits eutits eutits lab\Desktop\LabRAM 000000 Sync Status: Idle	Control Reset Mixer Options Auto Logout On Off	3)		×
File Management Load Alams Luda Alams Luta Temperature Existing: "C Change To: "C Change To: tor Existing: inHg Change To: tor Please be patie RAM Tools v4.0.4 Onnected g File Sync] Fimwa Sync Folder C:\Usen\RAM_Mx_L Senal Number: R7000 Sync Log Files	Ipload Files winload Files winload Files unts eutits eutits eutits lab\Desktop\LabRAM 000000 Sync Status: Idle	Control Reset Mixer Options Auto Logout On Off	3)		×
File Management Load Alams Luda Alams Luta Temperature Existing: "C Change To: "C Change To: tor Existing: inHg Change To: tor Please be patie RAM Tools v4.0.4 Onnected g File Sync] Fimwa Sync Folder C:\Usen\RAM_Mx_L Senal Number: R7000 Sync Log Files	upload Files	Control Reset Mixer Options Auto Logout On Off			×
File Management Load Alama Load A	upload Files	Control Reset Mixer Options Auto Logout On Off			×
File Management Load Alama Load A	upload Files	Control Reset Mixer Options Auto Logout On Off	3) -		×
File Management Load Alama Load A	upload Files	Control Reset Mixer Options Auto Logout On Off	3)		×



#### 4. Fixture File Installation and Usage Guide

#### 4.1. Configurations

Configurations serve two purposes for the LabRAM I and II series of Resodyn Acoustic Mixers: To set operational limits and to switch optional features on and off. The fixture file is used to set the operational limits (e.g., temperature sensors that can be turned on and off). By disabling the temperature measurements, RTDs can be unplugged from the system and not cause erroneous alarms or clutter the time history trends in the Viewer screen.

#### 4.2. Editing a Configuration

The following section shows how to modify the configuration provided with the LabRAM I and II systems called "default." This sequence assumes that the temperature measurement option is equipped, and that temperature #1 was not used initially.

Setup and Configuration

Temperature #1

Temperature #2

Temperature #3

Name:

Fixture:

Status Calibration Recipe Setup1 Setup2 Config Data

**Optional Equipment and Fixture Configuration** 

1. Under the Config tab, touch the Load Config button.

- 2. In the "Select Configuration" dialog box, select "default" by touching its line.
- 3. Touch OK.



**NOTE**: The "default" configuration is now loaded. Notice that all of the temperature checkboxes are unchecked. This means that, in its current state, no temperature alarming would be active and all temperatures would read "0."

4. Turn on Temperature #1 by touching it.

**NOTE**: Temperature #1 is now checked. The default configuration cannot be deleted, but can be modified.



Save Config

New Config

Delete

Confla



5. Touch the Save Config button to commit changes.

6. Touch Yes on the "Configuration Save Confirmation" dialog box.

**NOTE**: Now that temperature #1 is checked and the default configuration saved, Temperature Channel #1 will be monitored and displayed. Additionally, all fixture and user temperature alarm limits will be activated.



Setup and Configuration

Name: default

Status Calibration Recipe Setup1 Setup2 Config Data

**Optional Equipment and Fixture Configuration** 

Load

# 4.3. Linking a Fixture File to a Configuration

The following procedure describes how to assign a fixture file to a configuration.

1. From the Config tab with a configuration loaded (default configuration shown), touch the "Fixture:" text box.

	default default	Load Config	Save Config
	rature #1 rature #2	Delete Config	New Config
1 Tempe	rature #3		



**NOTE**: The "Fixture Definition/View" screen appears. The parameters for the selected fixture are displayed. When new fixtures are ordered from Resodyn Acoustic Mixers, fixture files will need to be installed on the mixer using the procedure described later in this document. If the system has more than one fixture defined, the "<<" and ">>" buttons scroll through all of the fixture files.

2. Touch Done when the correct fixture is visible.

3. Touch the Save Config button to commit changes.

Fixture Name: default			
Part Number:	900684		
Starting Frequency:	60. 50 Hz		
Maximum Frequency:	65.00 Hz		
Minimum Frequency:	55.00 Hz		
Maximum Acceleration:	100 0		
Maximum Temperature:	500 C		
Minimum Temperature:	0 0		
Maximum Vacuum:	30 inHg		
**	Done		
ixture Definition/View			
Fixture Name: default			
Part Number:	900684		
Starting Frequency:	60. 50 Hz		
Maximum Frequency:	65.00 Hz		
Minimum Frequency:	55.00 Hz		
Maximum Acceleration:	100 g		
Maximum Temperature:	500 C		
Minimum Temperature:	0 C		
Maximum Vacuum:	30 inHg		
<<	Done		[
etup and Configuration			
Status Calibration Recipe	Setup1 Setup2	Config Data	
Optional Equips	ment and Fixtu	re Configur	ation
Name: default		Load	Save
Fixture: default		Config	Config
© Temperature #1 © Temperature #2 © Temperature #3		Delete Config	New Config

# 4.4. Setting Active Configuration in Auto Mode

In order for a Configuration (and fixture) to be used by the LabRAM I and II systems, it has to be selected. This section shows how to select a Configuration in Auto Mode.

1. To select a Configuration, touch the Config/Alarms button above the green-colored Start Mixer button.

uto Mode				v12.3
Contr	ols	II	ndicato	rs
50 g 0 C Config/A Start Mixer		Superior	eleration: Power: perature: Vacuum:	0g 0.0% 0C 0inHg
Mix Ti	mer	N	avigatio	on
Duration: 00:00:00	Start/ Stop	Login/ Logout	Mode	Alarms
Remaining: 00:00:00	Reset	Setup/ Config	Viewer	
Login: supervisor	Status: Ready		Ala	rm 1994



**NOTE**: The "Auto Mode Configuration and Alarms" screen is displayed.

2. Select the Configuration for Auto Mode by touching the "Configuration Name:" text box.

configuration Name:	defau	ilt			
Acceleration Alarms			Vacuum Alarms		
Maximum:	100	9	Maximum:	30	inHg
Temperature Alarms			Max. Control Error:	5	inHg
Maximum:	500	C	Time to Setpoint:	60	sec
Minimum:	0	C			
Max. Control Error:	10	С			
Time to Setpoint:	60	sec			

**NOTE**: The "Select Configuration" dialog box appears, and the Configuration can be selected from the list (only one configuration is defined in the image).

3. Touch OK after the configuration has been selected.

The "Auto Mode Configuration and Alarms" screen displays again.

4. To close the dialog touch Done.



Configuration Name:	defau	ilt			
Acceleration Alarms			Vacuum Alarms		
Maximum:	100	9	Maximum:	30	inHg
Temperature Alarms			Max. Control Error:	5	inHg
Maximum:	500	C	Time to Setpoint:	60	sec
Minimum:	0	C			
Max. Control Error:	10	C			
Time to Setpoint:	60	sec			

# 4.5. Setting Active Configuration in Recipe Mode

When using the LabRAM I and II systems in recipe mode, the configuration (and fixture file) is assigned while defining the recipe. This section shows where to select a Configuration while defining a recipe.

**NOTE**: The recipe-mode Configuration is selected from the recipe editing screen shown to the right. Refer to RAM systems manual for instructions on how to navigate to this screen.

Demo I	tecipo	2		C	onfig:	def	ault
Add	Seg 1	Time 00:00;30		Temp 0	Vac 0		Seg: 1 Type: Time
Insert	2 3	00:00:30 00:00:30	1.1.5	0	0		Time: 00:00:30
Delete						Ξ	Temp: 0 C
	Reci Alar			Cancel Edit	]		Temp Control? □ Vac: <u>0</u> inHg Vac Control? □



# 4.6. Fixture Files

For optimum performance, the correct fixture files that correspond to the factory fixture need to be used. For each fixture purchased, fixture files are preinstalled on the second generation mixers at the factory. However, customers will need to download fixture files to the RAM systems for fixtures purchased after the initial RAM system purchase. Resodyn Acoustic Mixers will provide the fixture files via email, and the file is uploaded to the RAM system using RAM Tools (version 2.5.0 or later).

#### 4.7. Downloading Fixture Files

1. In RAM Tools, go to the Fixtures tab. Click on the "New Fixture" button.

🛠 RAM Tools v4.0.4		-	×
Connected			
Log File Sync Firmware Fixtures	Miscellaneous		
Edit/Create Fixtures	Fixture File Limits		
default 900684 (LR2 Short)	Part Number:		
occorr (En 2 onor)	Starting Frequency:		
	Maximum Frequency:		
	Minimum Frequency:		
Change Fixture	Maximum Acceleration:		
New Fixture	Maximum Temperature:		
	Minimum Temperature:		
	Maximum Vacuum:		

- 2. Navigate to the folder location where the fixture file was saved.
- 3. Select the fixture file and click Open.



4. The "New Fixture Successfully Added." message box will appear if the operation was successful.



5. The newly created fixture file will now be listed in the Edit/Create Fixtures text box.

og File Sync Firmware Fixtun	es Miscellaneous		
Edit/Create Fixtures	Fixture File Limits		
default 900684 (LR2 Short)	Part Number: 902042		
903346 (LR2 Jacket)	Starting Frequency: 58.20		
	Maximum Frequency: 65.00		
	Minimum Frequency: 55.00		
Change Fixture	Maximum Acceleration: 100		
New Fixture	Maximum Temperature: 250		
	Minimum Temperature: 0		
	Maximum Vacuum: 0		



