D2 Acoustical Measurement System

QuickStart Guide

Version 2.4

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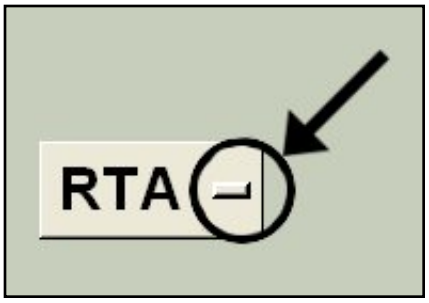
Welcome to the AcoustX D2 Acoustical Measurement System and win|RTA software. This guide will provide you with an overview of setting up and connecting the hardware, and installing and running the software.

Note on the software:

When you see a button with a bar on the right side, this indicates that when you click on it, a drop-down menu will appear.



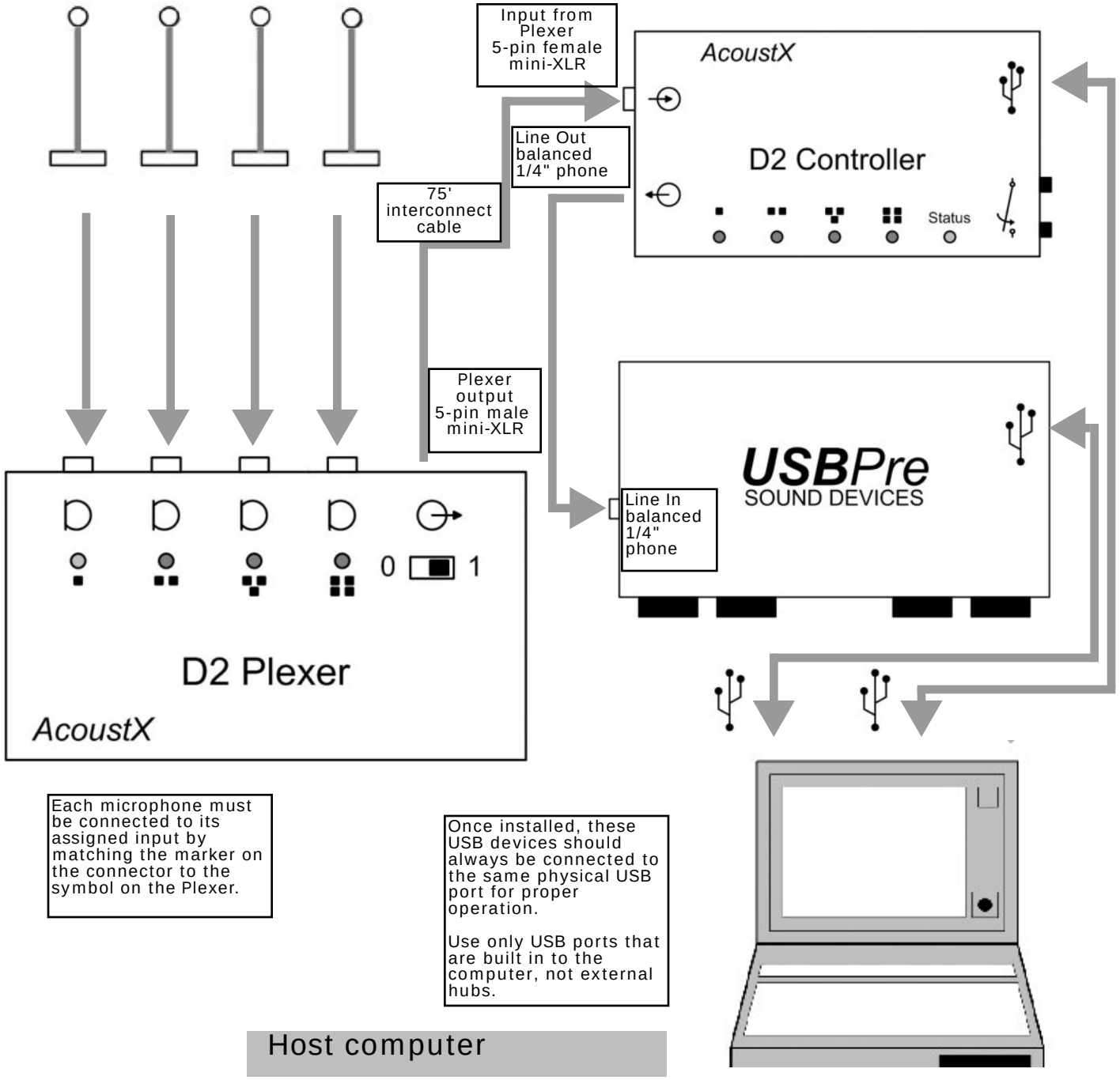
Version 2.4

CONNECTION DIAGRAM

Equipment in Auditorium

Equipment in Projection Booth

Microphones



Each microphone must be connected to its assigned input by matching the marker on the connector to the symbol on the Plexer.

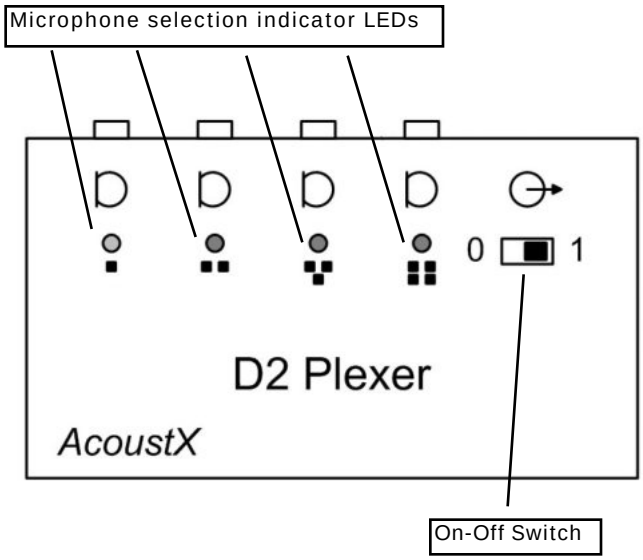
Once installed, these USB devices should always be connected to the same physical USB port for proper operation.

Use only USB ports that are built in to the computer, not external hubs.

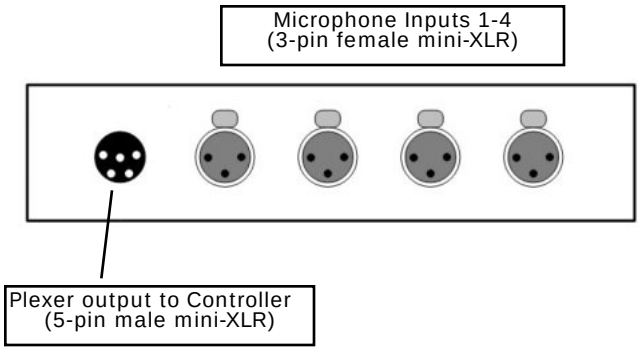
Host computer

Plexer Panel Diagrams

Front Panel View

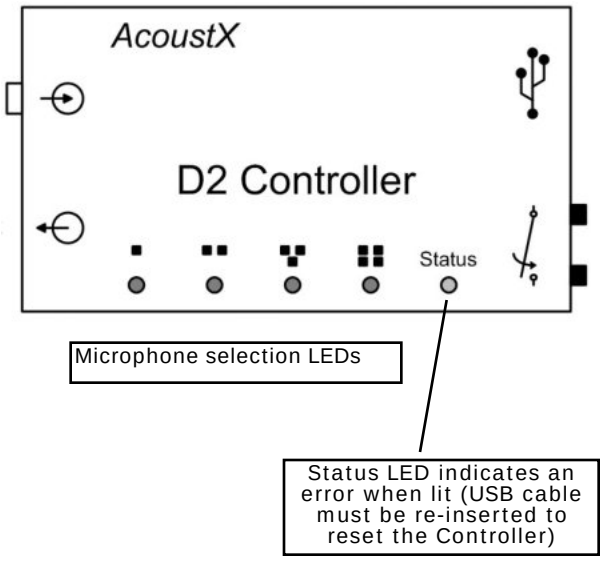


Top Panel View

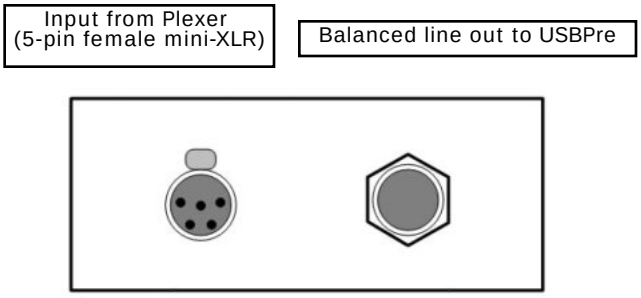


Controller Panel Diagrams

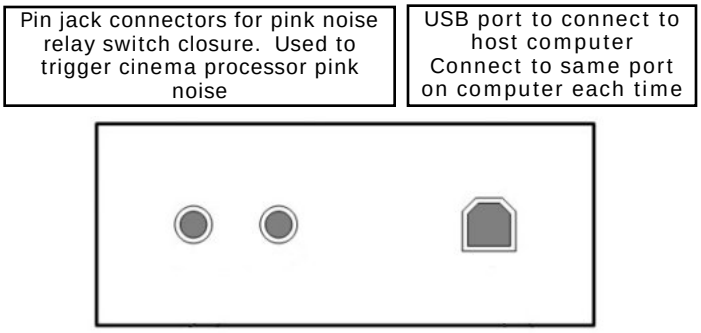
Top Panel



Left Panel



Right Panel



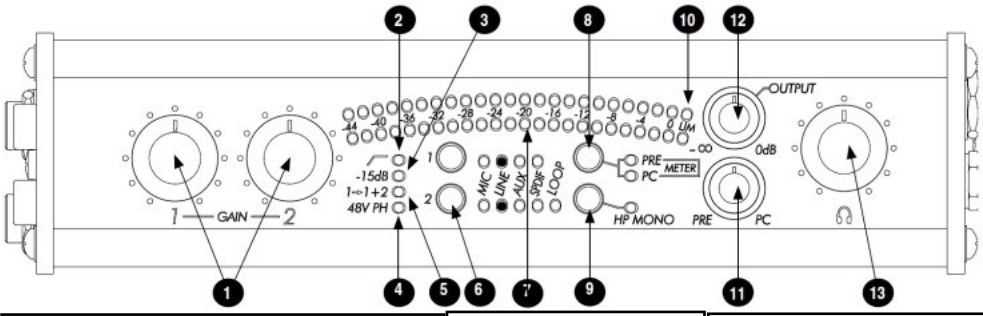
USBPre2 Panel Diagrams

Front Panel

2, 3, 4, 5 - Not used by D2.

8 - meter control

12 - Output level control - Set to maximum



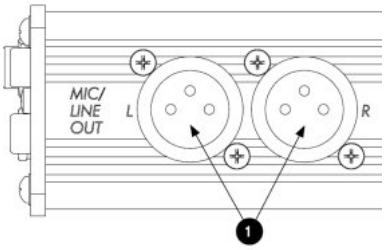
1 - Level control for Channel 1 is preset to MINIUM or FULLY COUNTERCLOCKWISE. Aluminum cap prevents accidental movement of input control. Channel 2 is also calibrated when knob is set to minimum gain.

6 - Input selectors for Channels 1 & 2. Line Input must be manually selected for both channels using these buttons.

7 & 10 - Level indicators

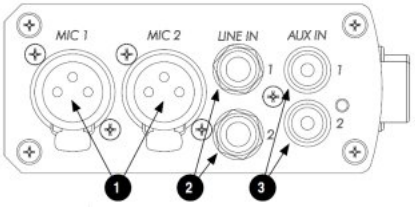
9, 11 -- headphone control

Back Panel



1 - Balanced outputs

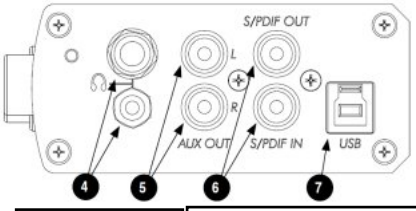
Input (Left) Panel



2 - The D2 uses the Line 1 input by default. Line 2 can be selected in software. Both channels are active in X-Y modes.

1 & 3 - Not used by the D2.

Output (Right) Panel



4 - Headphone outputs.

5 - Select AUX in Output.

7 - USB connection to host computer. Connect to same port on computer each time.

6 - Select S/PDIF in Input/Output.

Installation

1. Install the USBPre2 Digital Audio Interface first. Please refer to the documentation accompanying the USBPre for complete installation and operating instructions. Refer to the connection diagram and to the USBPre panel diagrams in this document for information on proper connection of the device. (Note: The USBPre must be connected directly to a USB input on the computer instead of through an external USB hub.) When using WMME drivers under Windows Vista, 7, & 8 you must set the sampling rate to 48 kHz 16 bit for Recording and Playback for the USBPre in the Windows Control Panel. You may also use the SoundDevices ASIO drivers available on their website. When using ASIO, you do not need to set the sampling rate.

2. Connect the D2 Controller as shown in the connection diagram. The Controller must be connnected directly to a USB input on the computer instead of through an external USB hub. When the Controller is connected, the computer should prompt for drivers for the device. The necessary drivers are found on the D2 CD. With Windows 8 & 10 you must enable unsigned drivers.

3. Insert the D2 software CD into an available drive on the host computer. Open the CD and double click on "mysetup". Follow the instructions and prompts of the installation procedure to install the win|RTA software onto the host computer. A short-cut icon for win|RTA can be placed on the desktop during the installation procedure.

4. Connect the remaining components of the D2 Acoustical Measurement System (D2 Plexer and microphones) as shown in the connection and panel diagrams.

5. Install the 9V alkaline battery in the Plexer opening the battery cover on the back panel. If you want to use a rechargeable battery, a 9V NiMH battery with a 250 mAh or greater rating is recommended.

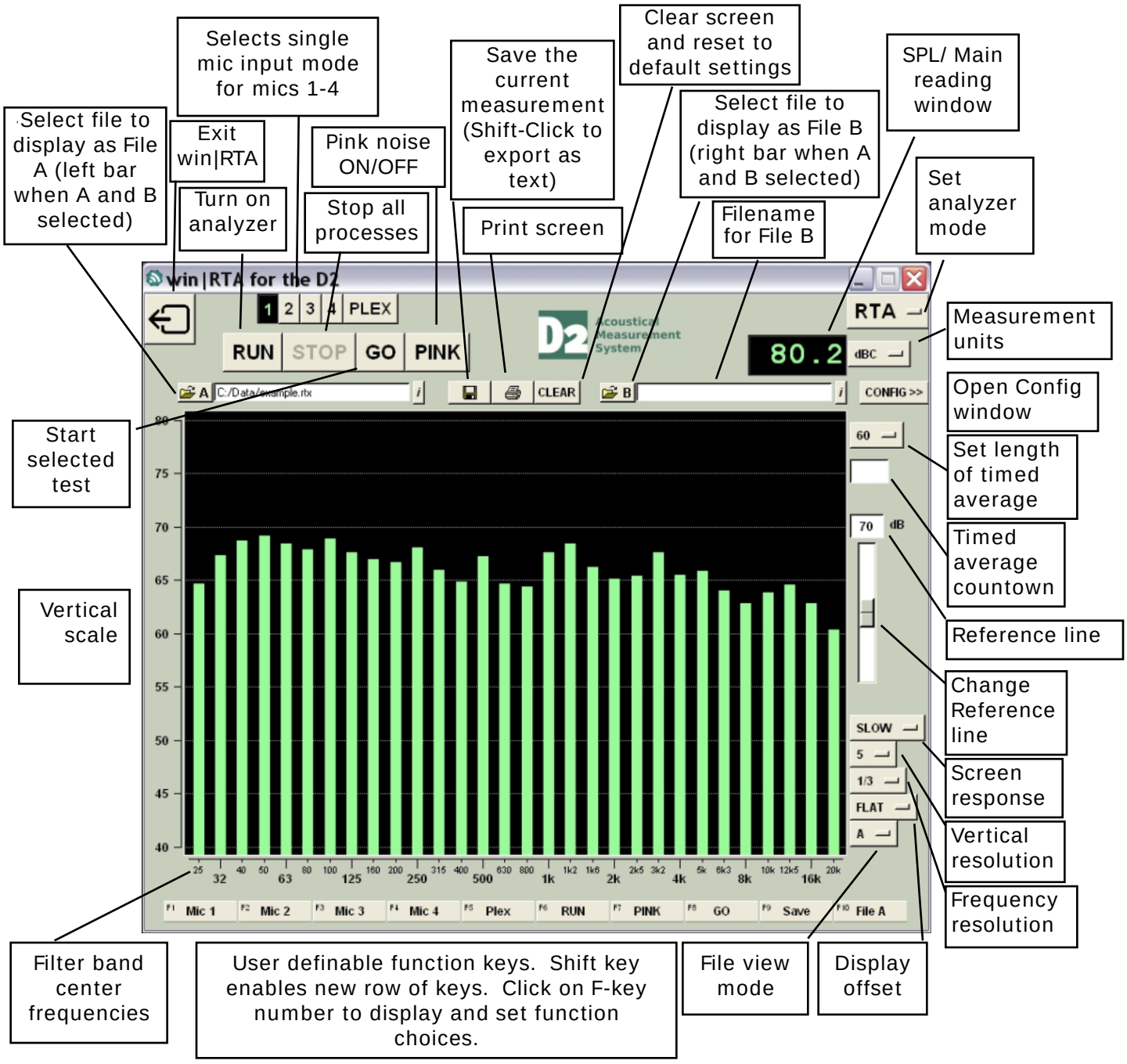
6. Double-click on the short-cut icon placed on the desktop to start the win|RTA software. Note that a default configuration (preferences) will be created the first time the program is executed. The user should customize this information as appropriate in the Config panels.

7. After installation, enable microphone calibration by selecting mic cal numbers in the Config menu. (See the Config diagrams later in this document.) The microphone serial numbers are assigned with Mic 1 as the lowest serial number through Mic 4 as the highest serial number. The "Mic Cal" checkbox must be selected to enable mic calibration.

8. With the USBPre2 connected, select the "Interfaces" window in Config. Press "Select" and choose USBPre2 from the list of available interfaces.

9. Finally, click "Save Configuration" to store the preferences to disk.

Main Screen



SPECIAL KEYS AND FUNCTIONS

- ESC key kills all processes
- PgUp/PgDn or mouse wheel moves reference line
- Shift shows new row of function keys
- Shift-click on Save button to export as text (.TXT)
- Shift-click and drag mouse on display to zoom view in RTA mode. Click to restore.
- Right-click displays edit menu when in comment

- Hold cursor over filename field to see full pathname

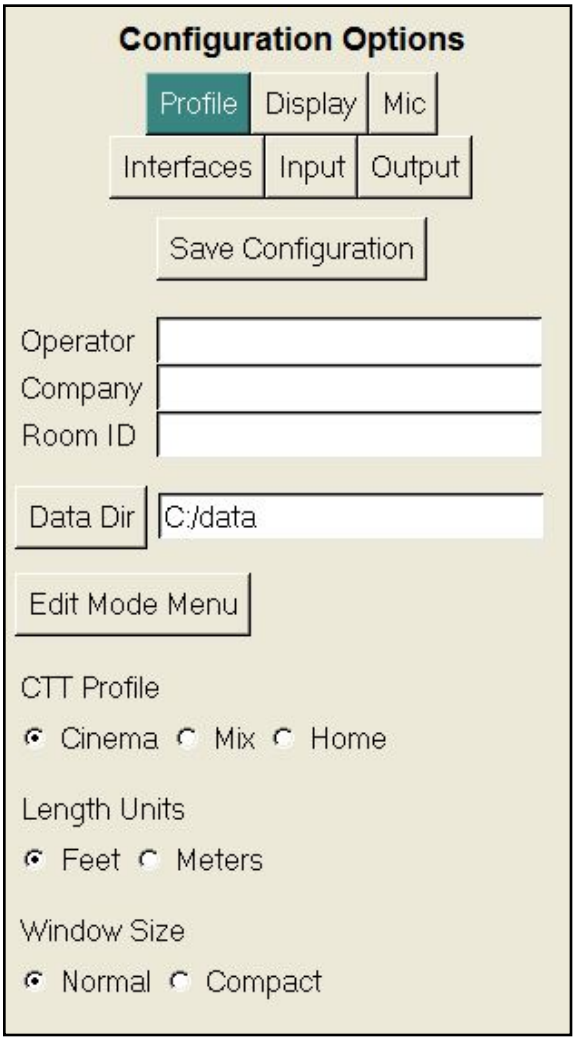
CTT MODE KEYS

- Up/Down arrow moves among menu selections
- Left/Right arrow moves in or out of current menu
- Alt-Left Arrow moves up one levele when in a data entry field
- Shift-click on Home CTT Coverage test button to rename

X-Y

- Shift-click-drag moves both channel gains together

Configuration: Profile and Interfaces



Write configuration data to disk

Technician name

Organization

Name of theatre

Select data directory

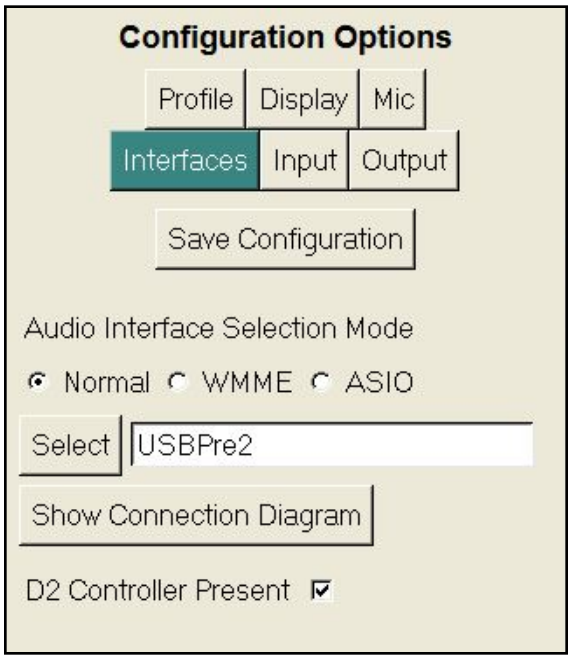
Selected data directory
Defaults to "My Documents"

Set items to show on Mode menu

Set CTT configuration for type of room under test

Set default units for measurements

Normal is for displays 1024x768 or larger. Compact is for smaller screens, 1024x600.
Save Configuration and restart win|RTA to take effect.

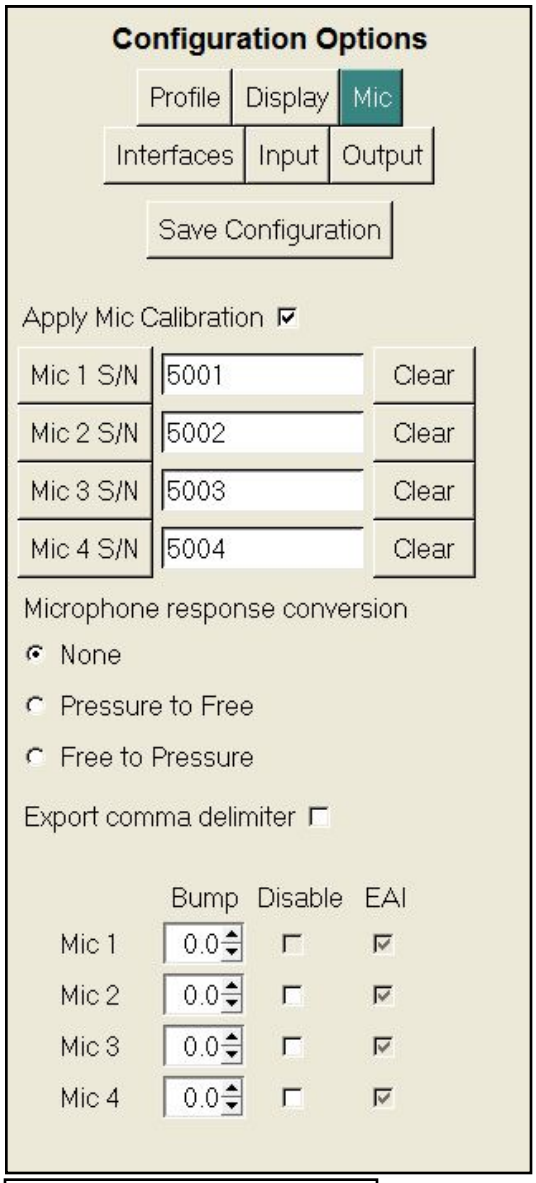


Set the interface type

Select audio interface

Enable D2 Controller

Configuration: Microphones



Adjust the gain of individual microphones.

Enable and load microphone calibration files.

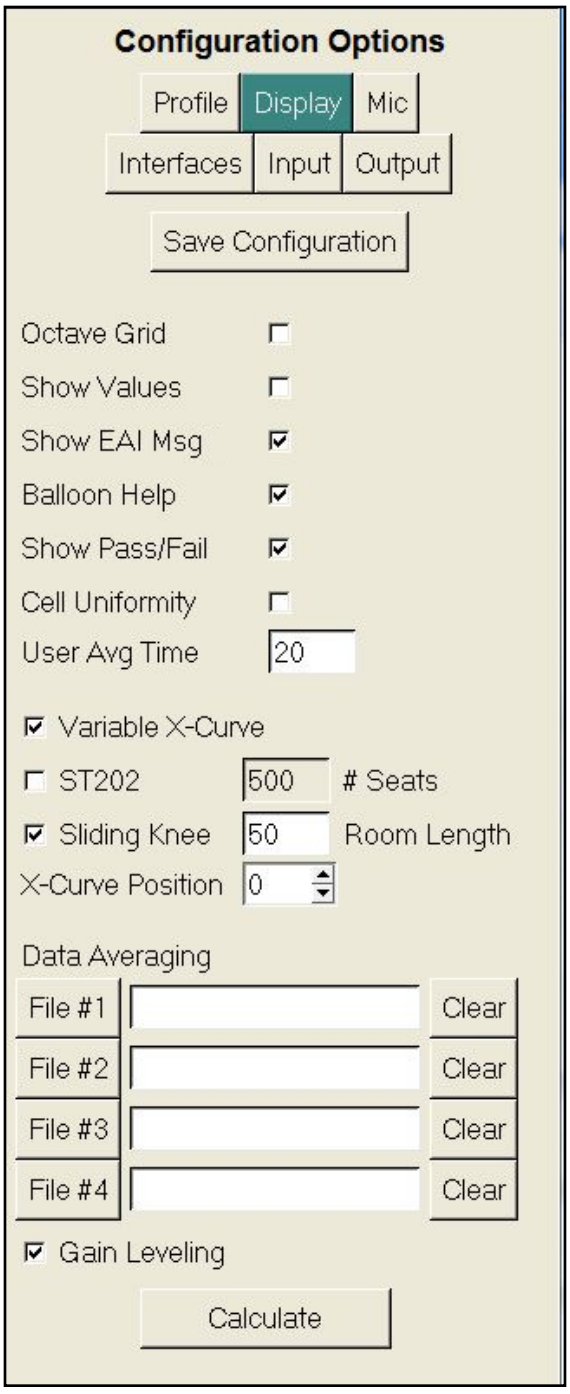
Change the response type of the microphone. For a discussion of this topic, see the AcoustX website.

When exporting a mic cal file using Shift-click Clear (Export), insert a comma after the frequency.

Disable one or more microphones

If the loaded mic cal files are configured for EAI, a check will appear in the EAI checkboxes. To use EAI, either these boxes must be checked, or one of the mic cal files must be exported (SHIFT-click Clear) and loaded into the external software. For more information on EAI, see http://acoustx.us/eai.html.

Configuration: Display



Display octave markers

Show bar values when cursor is moved over a bar

Show EAI mic config warning message

Enable balloon help

Show Pass/Fail in CTT

Set display for Cat. No. 566 test film (film projectors)

Set length of User Average

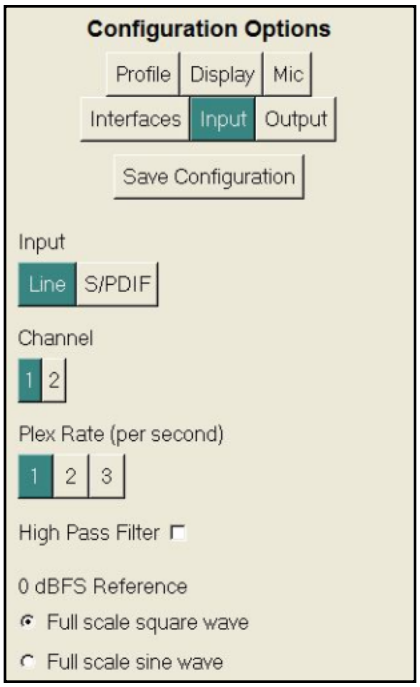
Enable Variable X-Curve

The variable X-Curve can either change the slope of the curve (according to SMPTE ST202) or the frequency at whiich the slope begins (the knee).

Change the vertical postion of the X-Curve

Average data from previous measurements. This is useful if you wish to use one microphone and get results similar to using the mulitiplexer. Make measurements at four different positions, load the four files, and click Calculate. For best results, load the data taken at reference position into File #1 and enable Gain Leveling.

Configuration: Input and Output



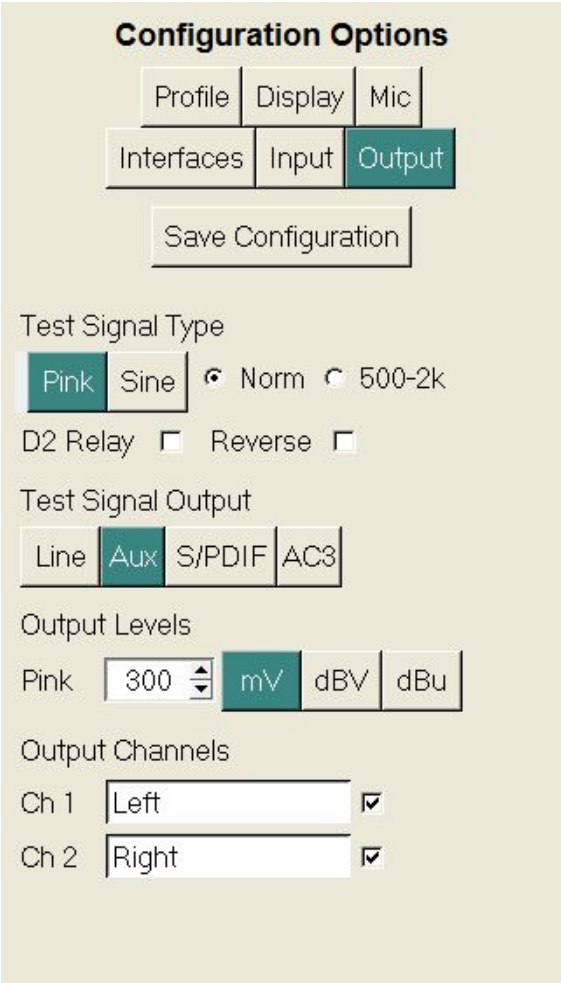
Select Input

Select input channel for line input (Mic selection is on main screen)

Set Plex rate

Apply 22 Hz high pass filter to FLAT, Line In, S/PDIF

Select 0 dBFS reference. There is a 3 dB difference between settings.



Configure PINK Button behavior

Enable & configure D2 Relay

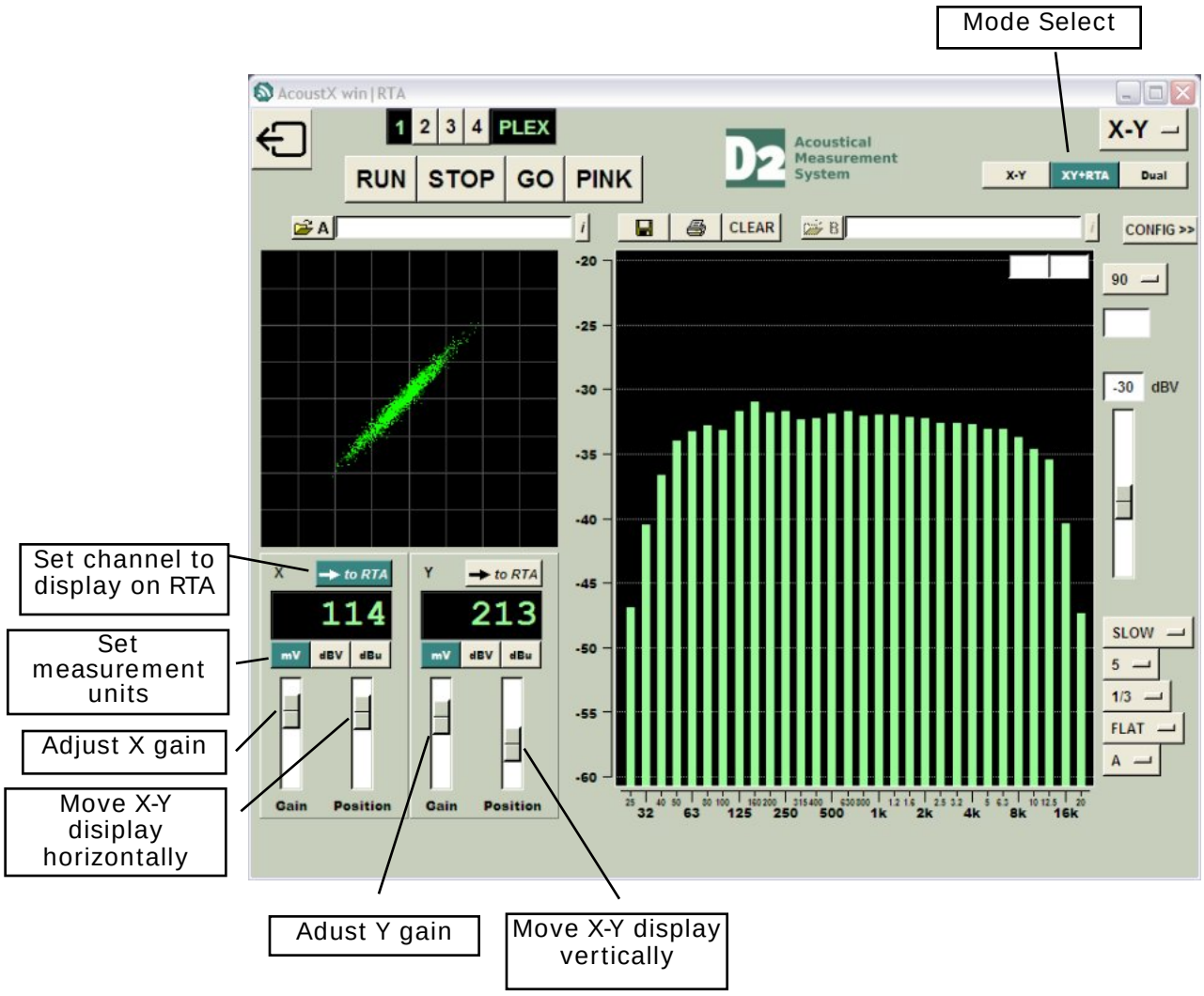
Select test signal output port (shown with optional AC3 encoder)

Set units of measure and level for outputs

Set output levels

Enable outputs. In Analog mode, the channels can be named.

X-Y Oscilloscope



Dual Trace Oscilloscope