



**D2 Acoustical Measurement System  
Cinema QuickStart Guide**

Version 1.8

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Welcome to the **AcoustX D2 Acoustical Measurement System**, Cinema Version, 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. The QuickStart Guide serves as a basic reference for the **D2** system, but is not intended as a detailed guide to operation of the system. More detailed reference information regarding system operation and the performance of acoustical tests is provided through separately offered training seminars. Contact AcoustX regarding the availability of training seminars.

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Version 1.8

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AcoustX warrants the D2 Acoustical Measurement System hardware and its parts against defects in materials or workmanship for a period of one (1) year from the original date of purchase. During period, AcoustX will repair or replace a defective product or part without charge to the customer. The customer is responsible for delivering the defective component (or the entire D2 Acoustical Measurement System, if requested) to AcoustX. The customer must pay for all shipping and insurance charges transportation of the defective component(s) to AcoustX for repair. AcoustX will assume responsibility for shipping and insurance charges involved in returning the component(s) to the customer.

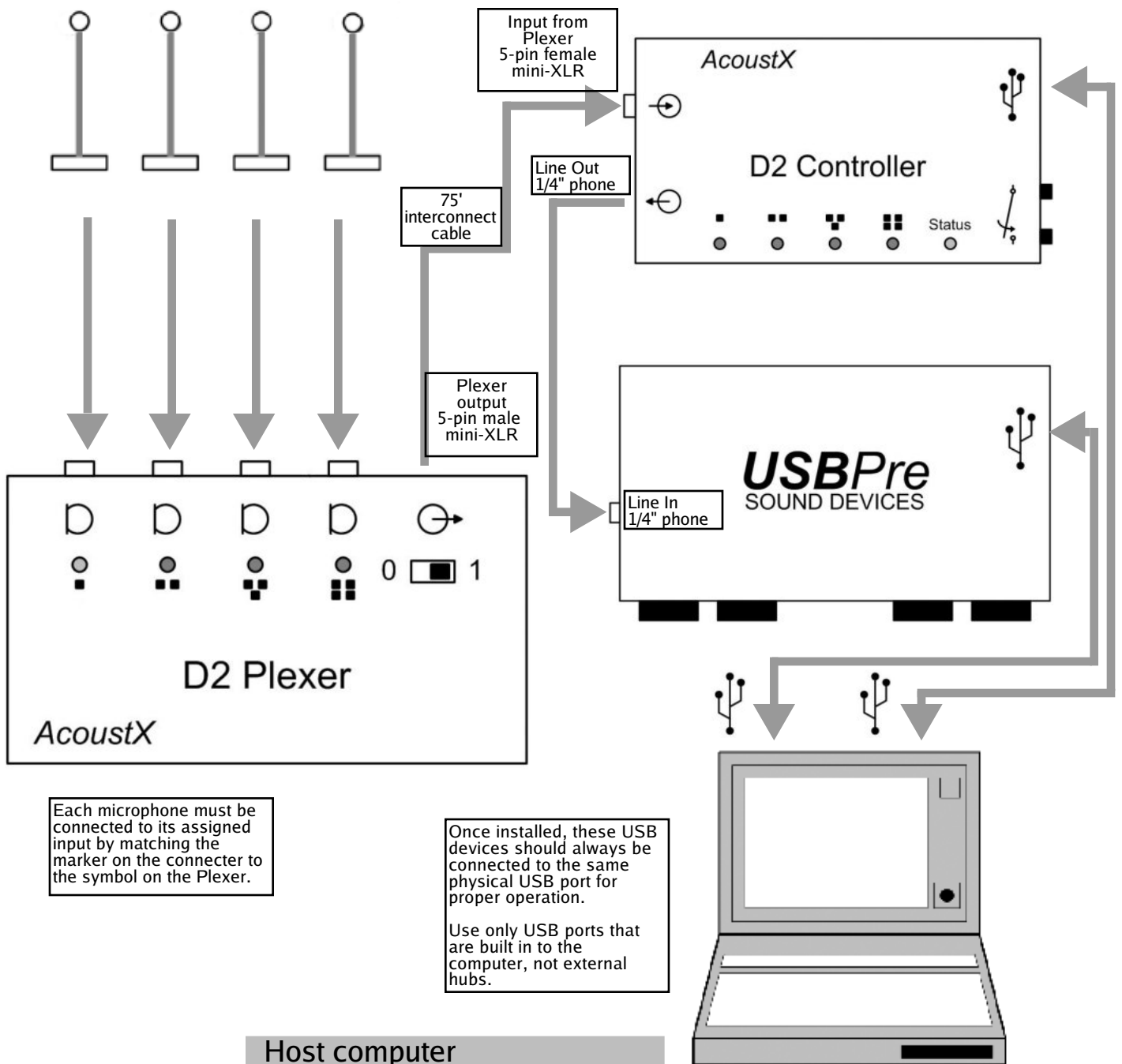
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# CONNECTION DIAGRAM

## Equipment in Auditorium

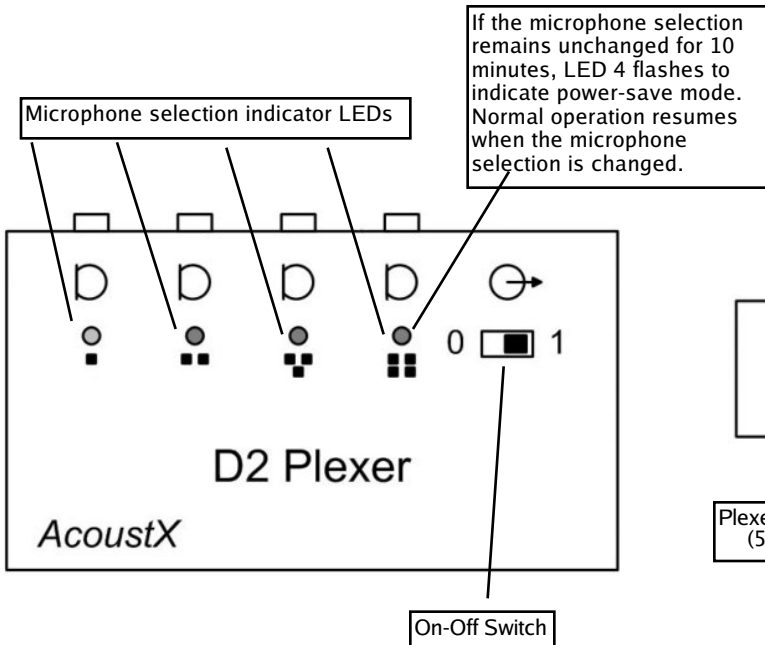
## Equipment in Projection Booth

### Microphones

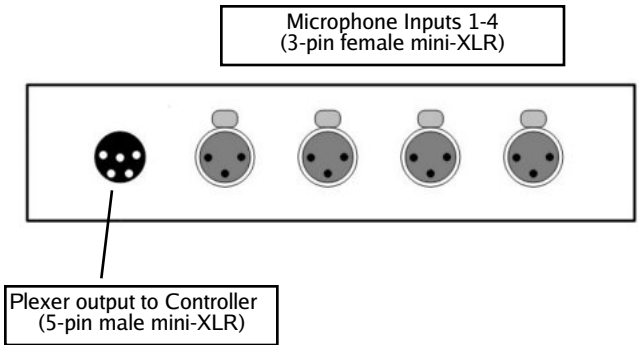


# Plexer Panel Diagrams

Front Panel View

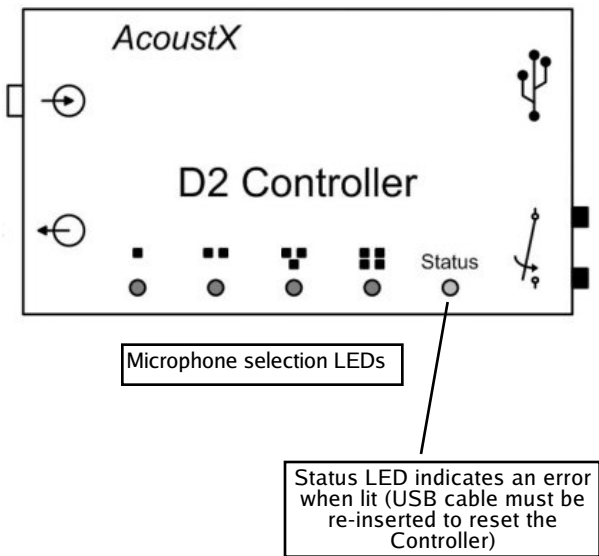


Top Panel View

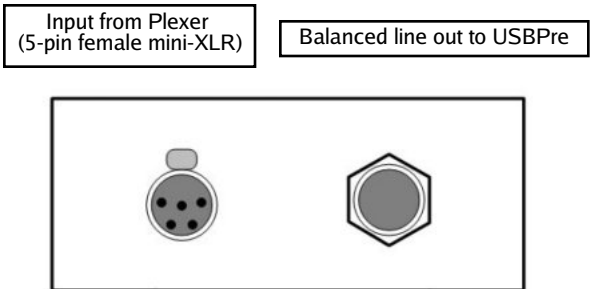


# Controller Panel Diagrams

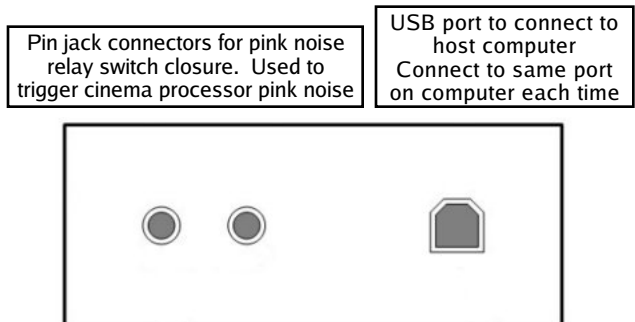
Top Panel



Left Panel



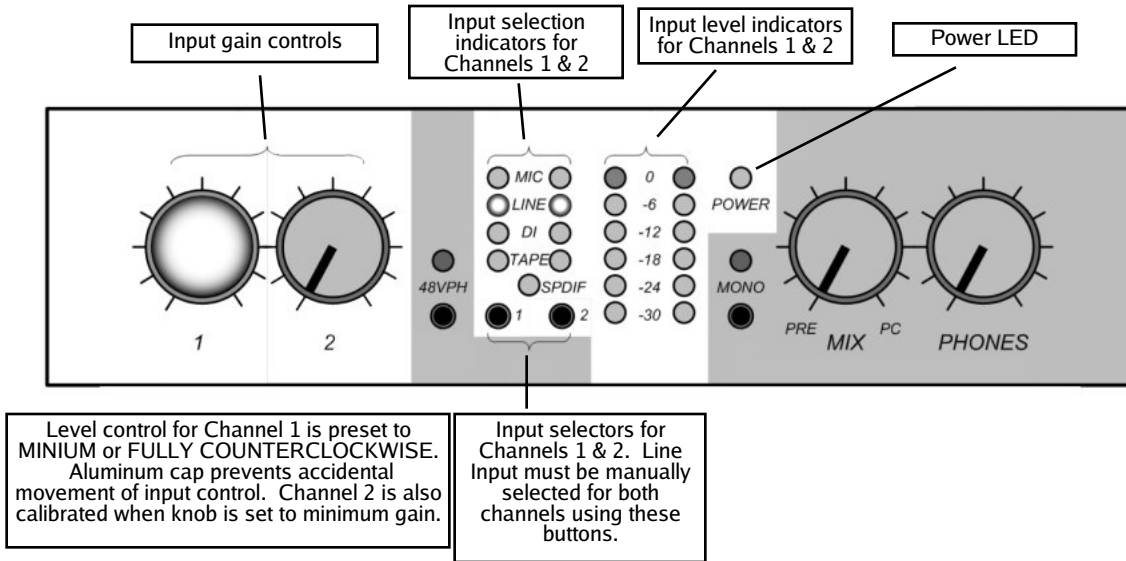
Right Panel



# USBPre Panel Diagrams

## Front Panel View

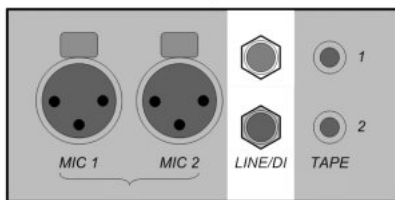
NOTE: Greyed-out areas of the drawings represent controls and inputs/outputs that are not used by the D2 Acoustical Measurement System.



Note: If the Power LED is the only LED lit after installation, the USBPre driver was not installed properly. Visit the AcoustX website for help reinstalling the driver.

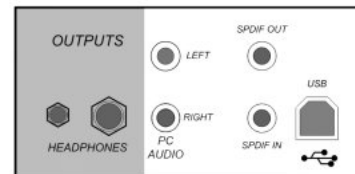
## Input (Left) Panel View

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



## Output (Right) Panel View

Pink noise outputs



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

# Installation

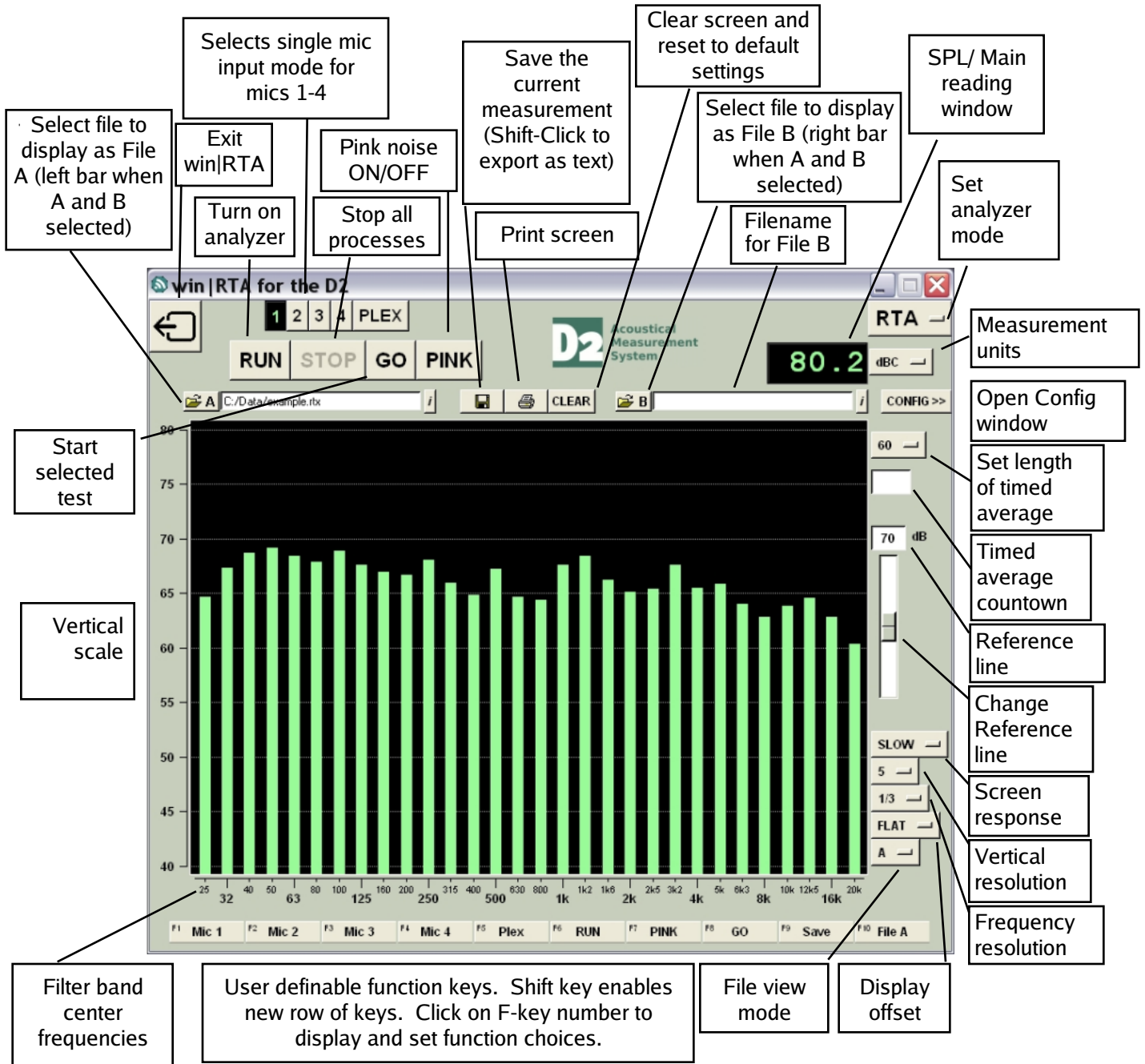
1. Install the **USBPre** digital audio interface first. Please refer to the documentation accompanying the USBPre for complete installation and operating instructions. Select "Preferred Installation" after inserting the USBPre software CD. Refer to the connection diagram and to the USBPre panel diagrams 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.)
2. Connect the **Dz Controller** as shown in the connection diagram. The Controller must be connected 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 **win|RTA** CD.
3. Insert the **win|RTA** software CD into an available drive on the host computer. Open the CD and double click on "Setup". 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 **Dz Acoustical Measurement System (Dz 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. Next, with the USBPre connected, select the Interfaces window in Config. Press Select, and choose USBPre from the list of available interfaces.
9. Finally, click Save Configuration to store the preferences to disk.

## 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.



# 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)
- Click and drag mouse on display to zoom view in RTA mode
- 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 level 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

**Configuration Options**

Operator

Company

Room ID

Data Dir

System Personality  
 Cinema
  Mix
  Home

Length Units  
 Feet
  Meters

Window Size  
 Normal
  Netbook

Write configuration data to disk

Select data directory

Set default units for measurements

Technician name

Organization

Name of theatre

Selected data directory Defaults to "My Documents"

Set software options for type of room under test

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

**Configuration Options**

Audio Interface

D2 Controller Present

Select audio interface

Enable D2 Controller



# Configuration: Microphones

**Configuration Options**

Profile | Display | **Mic**

Interfaces | Input | Output

Save Configuration

Apply Mic Calibration

Mic 1 S/N	1001	Clear
Mic 2 S/N	1002	Clear
Mic 3 S/N	1003	Clear
Mic 4 S/N	1004	Clear

Mic Bump Adjustment (dB)

Mic 1	0.0
Mic 2	0.0
Mic 3	0.0
Mic 4	0.0

Mic Disable

Mic 1	<input type="checkbox"/>
Mic 2	<input type="checkbox"/>
Mic 3	<input type="checkbox"/>
Mic 4	<input type="checkbox"/>

Enable and load microphone calibration files.

Adjust the gain of individual microphones.

Disable one or more microphones

# Configuration: Display

**Configuration Options**

Profile **Display** Mic

Interfaces Input Output

Save Configuration

Octave Grid

Show Values

Balloon Help

Cell Uniformity

User Avg Time

X-Curve Position

Variable X-Curve

202M  # Seats

Sliding Knee  Room Length

Data Averaging

File #1	<input type="text"/>	Clear
File #2	<input type="text"/>	Clear
File #3	<input type="text"/>	Clear
File #4	<input type="text"/>	Clear

Gain Leveling

Calculate

Display octave markers

Show bar values when cursor is moved over a bar

Enable balloon help

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

Set length of User Average

Change the vertical position of the X-Curve

Enable Variable X-Curve

The variable X-Curve can either change the slope of the curve (according to SMPTE 202M) or the frequency at which the slope begins (the knee).

Average data from previous measurements. This is useful if you wish to use one microphone and get results similar to using the multiplexer. 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

Configuration Options

Profile Display Mic

Interfaces **Input** Output

Save Configuration

Input

**Line** S/PDIF

Channel

**1** 2

Select Input

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

Configuration Options

Profile Display Mic

Interfaces Input **Output**

Save Configuration

PINK Button

D2 Relay

Internal Generator

Pink Noise Output

**Analog** S/PDIF AC3

Pink Noise Outputs

Level 300  **mV** dBV dBu

Ch 1 Left

Ch 2 Right

Configure PINK Button behavior

Select test signal output port  
Note: Screen shows win|RTA with optional AC3 test signal encoder.

Set units of measure and level for outputs

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

# X-Y Oscilloscope

The screenshot displays the AcoustX software interface. At the top, there are window controls and a 'Mode Select' dropdown menu currently set to 'X-Y'. Below this are buttons for 'RUN', 'STOP', 'GO', and 'PINK', along with the 'D2 Acoustical Measurement System' logo. The main display area is split into two sections: an X-Y Oscilloscope on the left and a Real Time Analyzer (RTA) on the right. The X-Y Oscilloscope shows a green diagonal line on a black grid. The RTA shows a frequency spectrum with green bars on a black background, with a y-axis ranging from -60 to -20 dBV and an x-axis with logarithmic frequency markers (25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1k, 1.2k, 1.6k, 2k, 2.5k, 3.2k, 4k, 5k, 6.3k, 8k, 10k, 12.5k, 16k). On the left side of the interface, there are two columns of controls for channels X and Y. Each column includes a 'to RTA' button, a digital display showing values 114 and 213, unit selection buttons (mV, dBV, dBu), and two vertical sliders labeled 'Gain' and 'Position'. Callout boxes with arrows point to these controls, providing instructions: 'Set channel to display on RTA' (pointing to the 'to RTA' button), 'Set measurement units' (pointing to the unit buttons), 'Adjust X gain' (pointing to the X Gain slider), 'Move X-Y display horizontally' (pointing to the X Position slider), 'Adjust Y gain' (pointing to the Y Gain slider), and 'Move X-Y display vertically' (pointing to the Y Position slider). On the right side of the RTA, there are additional controls including a 'CONFIG >>' button, a '90' dBV scale indicator, a '-30 dBV' level indicator, a 'SLOW' speed control, and buttons for '5', '1/3', 'FLAT', and 'A'.

# Dual Trace Oscilloscope

