



Connector Pane

Photoresistor Theremin.vi

Photoresistor Theremin.vi reads the voltage across a photoresistor (schematic diagram and photograph of circuit are on Front Panel) and converts it to an audio frequency played through speakers. The VI begins with the calibration of the instrument for a key inputted by the user (major scale), then gives the user the option to change the volume, add a harmony (3rd above), transpose up an octave, record their playing, and playback any of their saved recordings. Please find a brief description of each state of the VI's state machine below:

Main Menu:

Prompt user if they are ready to calibrate the instrument or exit the VI.

Calibration:

Prompt user for key (major scale), calculate array of frequencies, send 10 V to the circuit, calibrate instrument, and prompt the user when they are ready to begin using the instrument.

Practice/Record:

Read photoresistor voltage, convert to frequency, read and set audio output Volume, incorporate harmony or octave in waveform if Harmony or Octave are TRUE, display waveform on graph, output audio frequency to speakers, record if Start/Stop Recording is TRUE, go to Playback Recording if Playback Recording is TRUE.

Playback Recording:

Prompt user which file they want to play back, read specified columns from formatted .csv file, and output filename, audio, and waveform graph.

Reset/Restart/Stop:

Prompt user if they want to restart or exit and reset controls and indicators to default values.



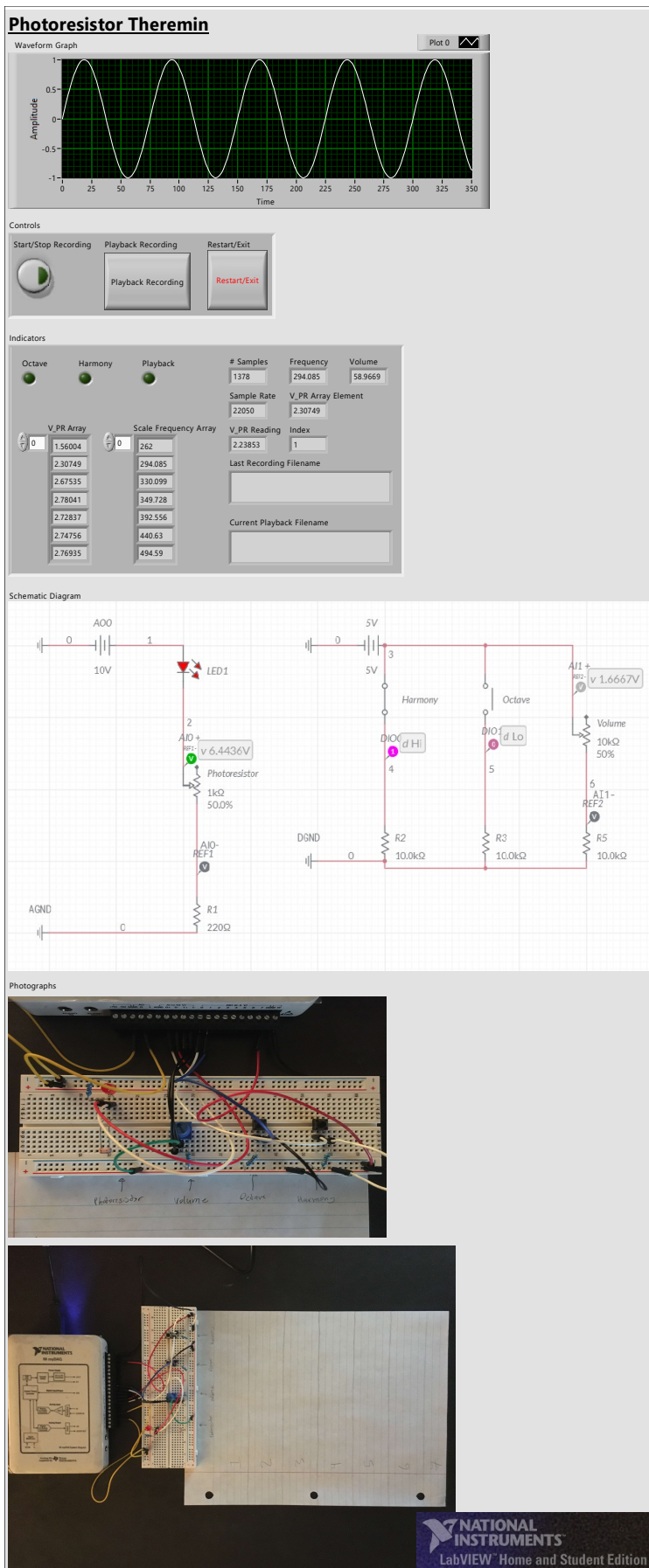
Photoresistor Theremin.vi

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Front Panel





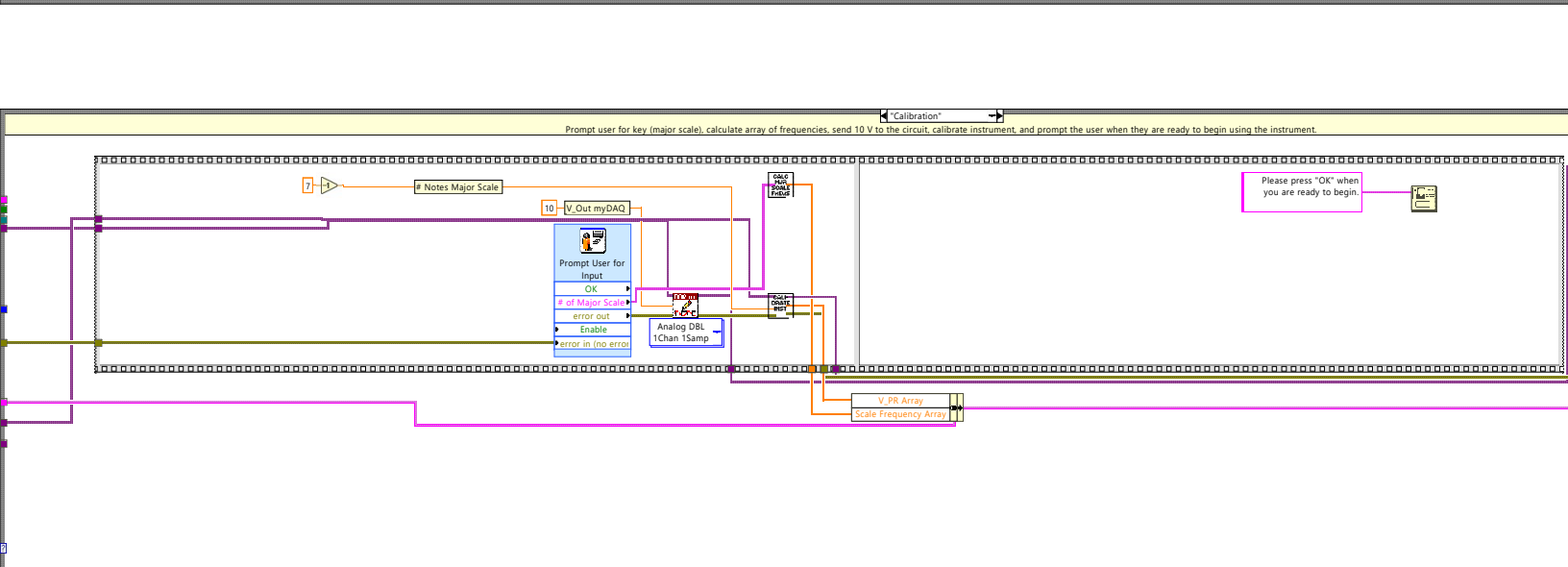
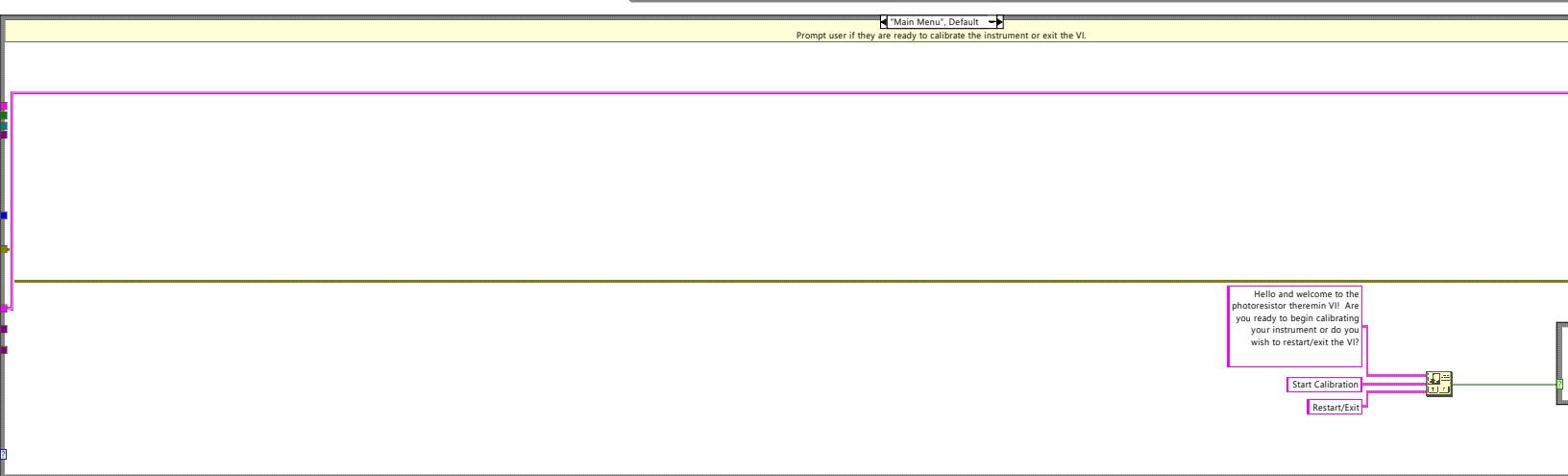
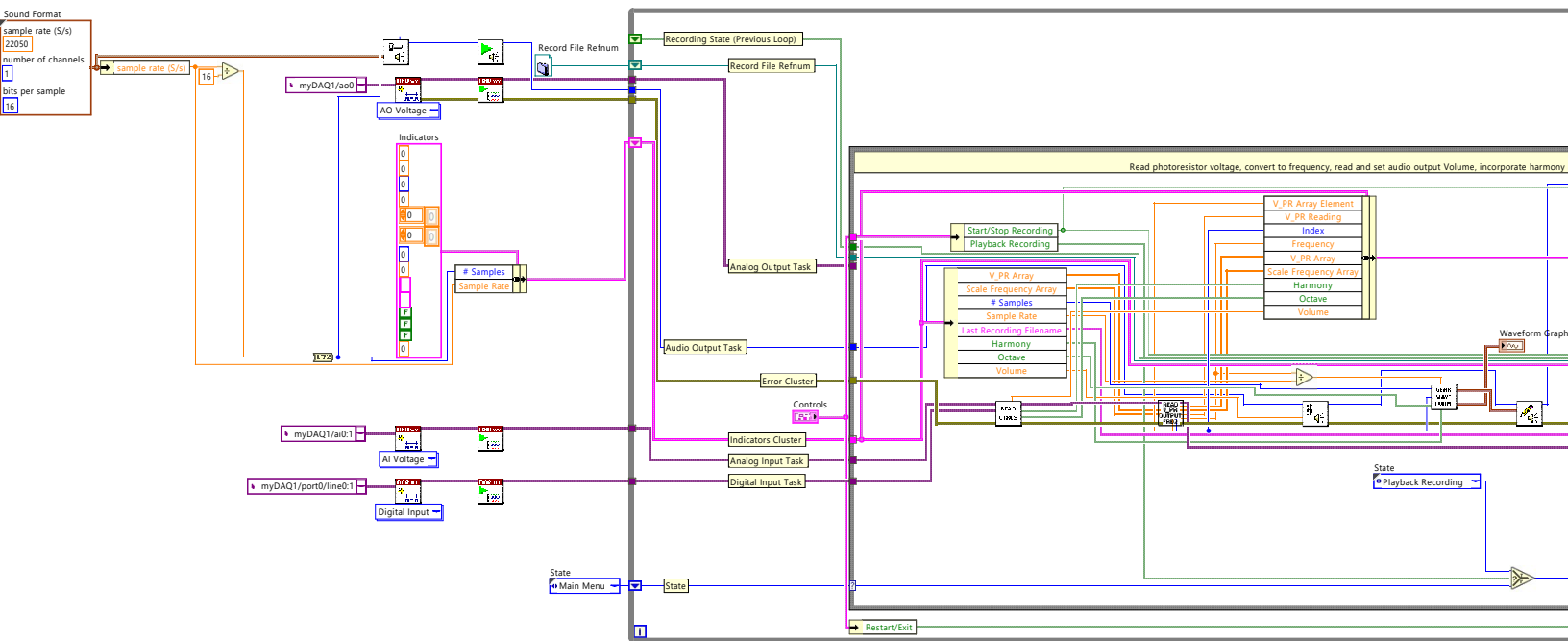
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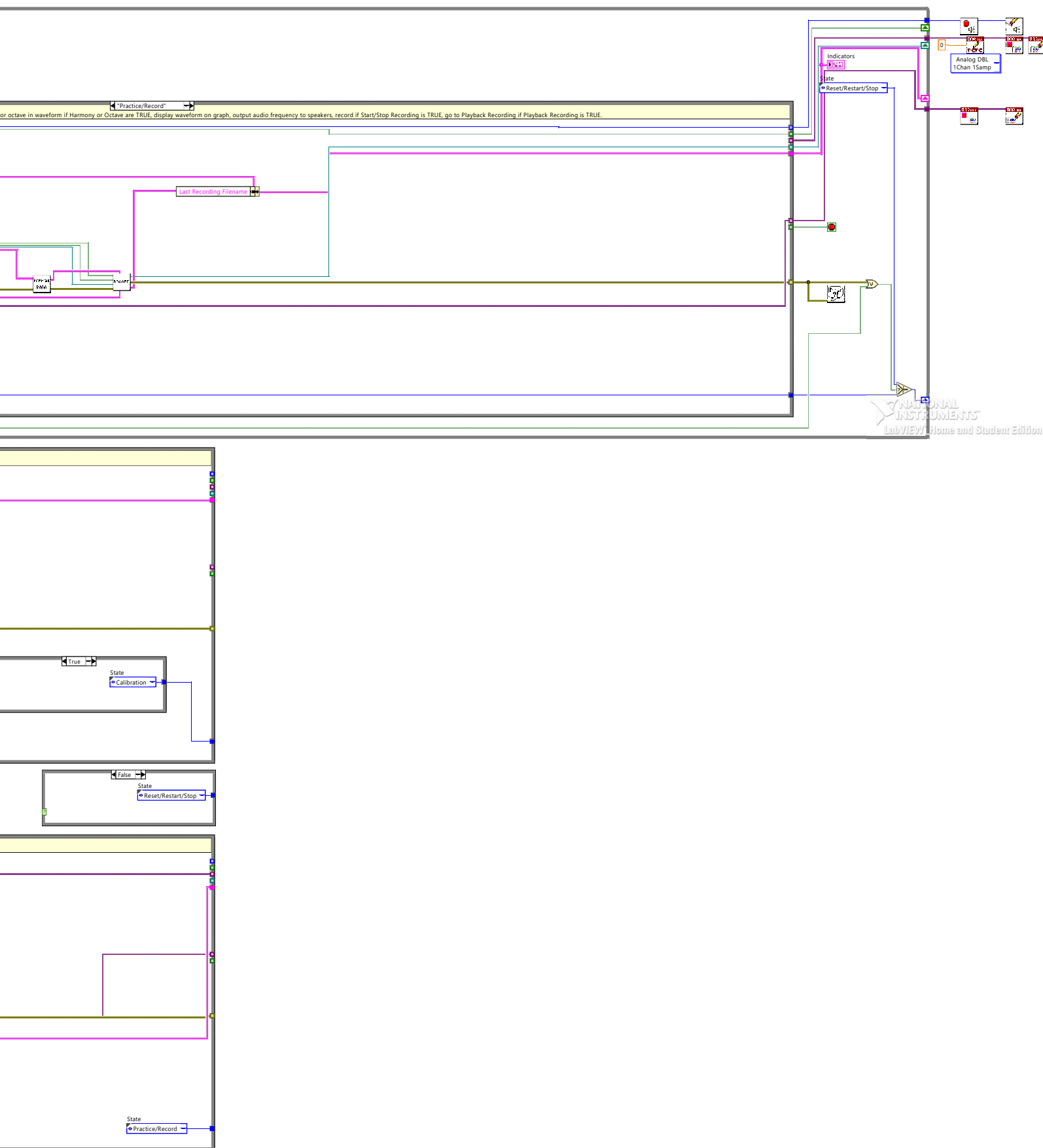
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Block Diagram



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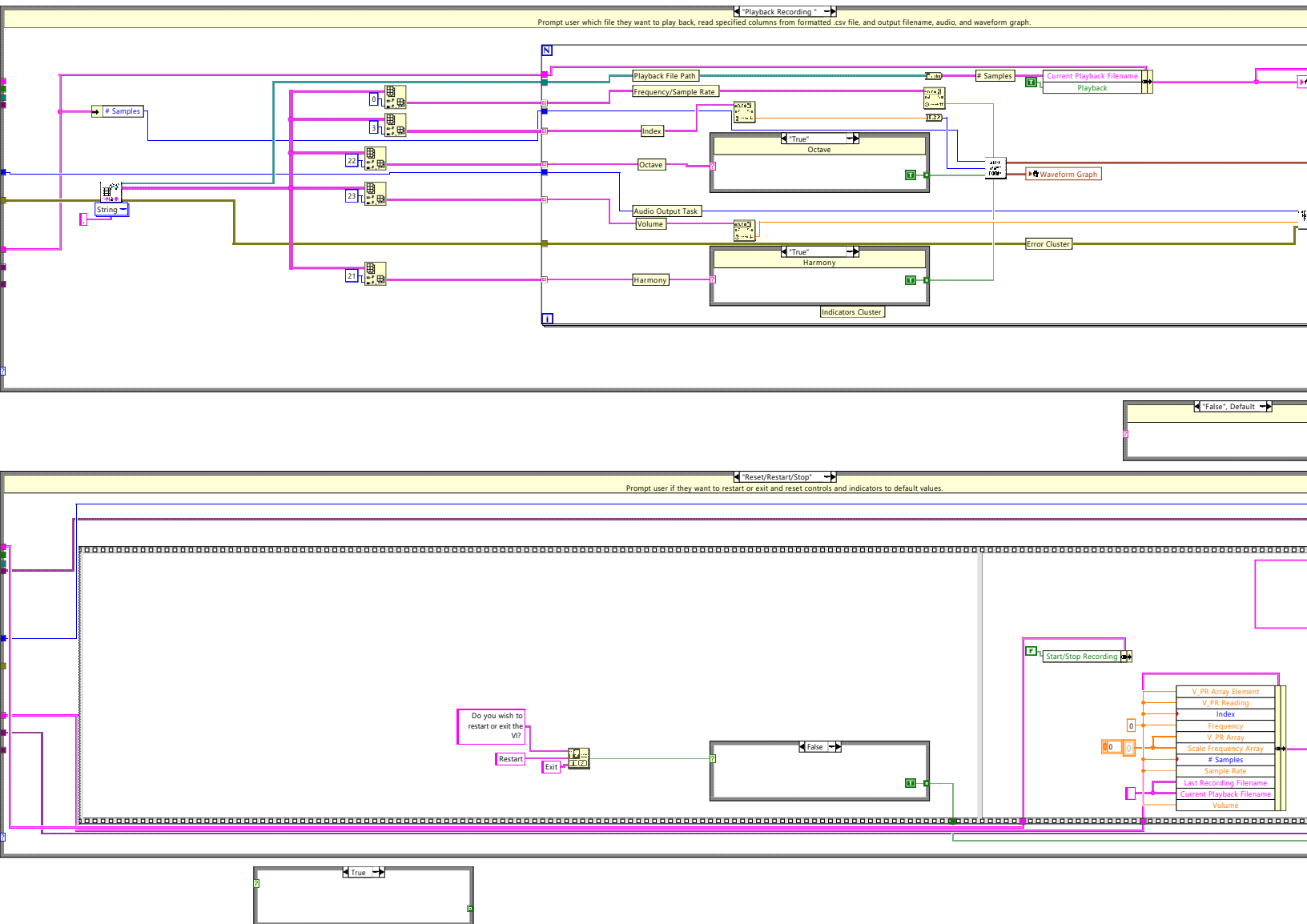


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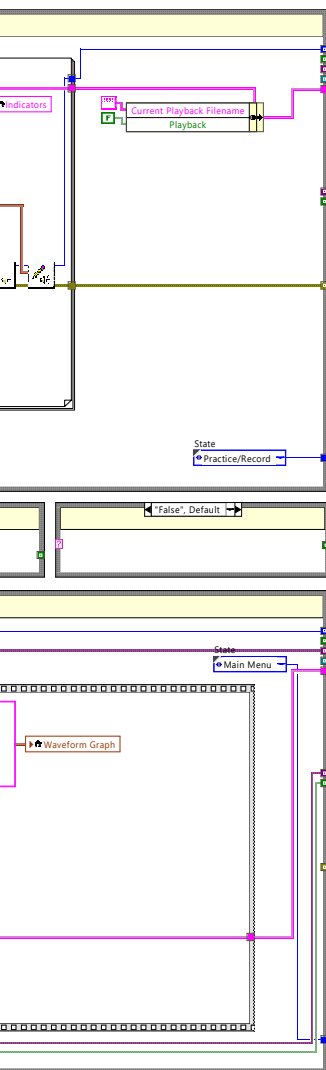


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Express VI Configuration Information