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Input Stage and Processing:

- User can select various volts/div and time/div scaling parameters
- Processor extracts minimum, maximum, and average voltages of the input waveform as well as frequency
- Sampler samples at appropriate rate for selected time/div scaling, and processor appropriately scales vertical data for selected volts/div
- **Stretch goal** Processor can perform an auto-set by looking at the voltage range and frequency and selecting appropriate volts/div and time/div for the user
- **Stretch goal** User selectable cursors (voltage and time)

Display Stage

- Takes waveform X,Y data, translates to screen coordinates, and plots the waveform on the screen through the frame buffer
- Takes binary data for min, max, average voltages and frequency and displays them on the screen in alphanumeric characters
- When a sudden change in voltage occurs and two consecutive samples have a jump, the intermediate pixels are filled in (for instance for a high frequency jump at the edge of a square wave, the vertical square wave edge is displayed)
- Displays a gray grid behind the scope trace (corresponds to selected time/div and volts/div)
- **Stretch goal** Display “nice” 8-bit color characters stored in the flash memory
- **Stretch goal** Display the user selectable cursors and display data about the selection in alphanumeric characters