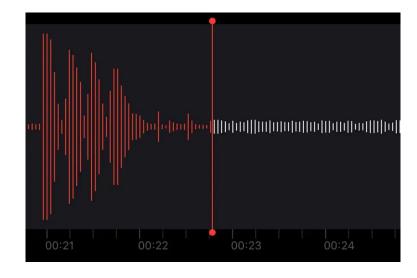
FPGA Music Visualizer

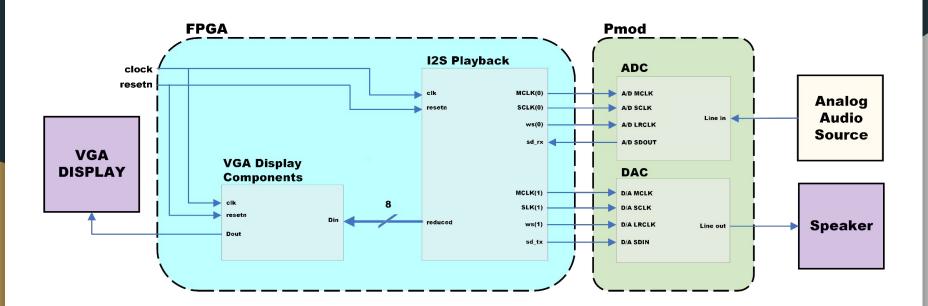
By: Benjamin Rojewski, Nicholas Spanos, Justin Janulewicz, and Andrew Waite

What Does it do?

The device functions as a music visualizer; it takes incoming music from the Pmod port (represented as voltage), converts it to digital data using an ADC and then displays this data on a VGA display. In essence, it functions very similarly to the voice memos app on IOS.

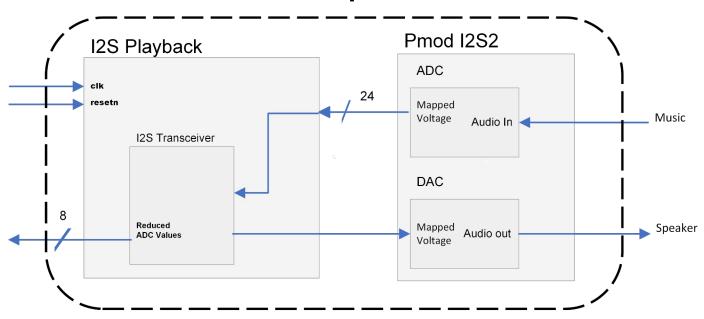


Datapath



Pmod & I2S Playback Circuit

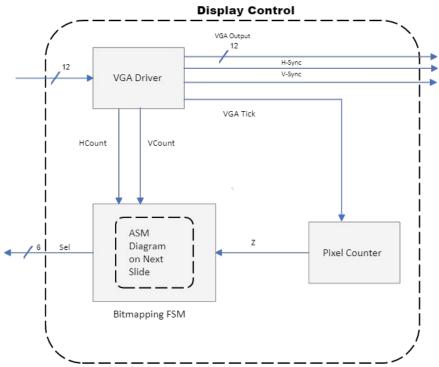
Data Capture



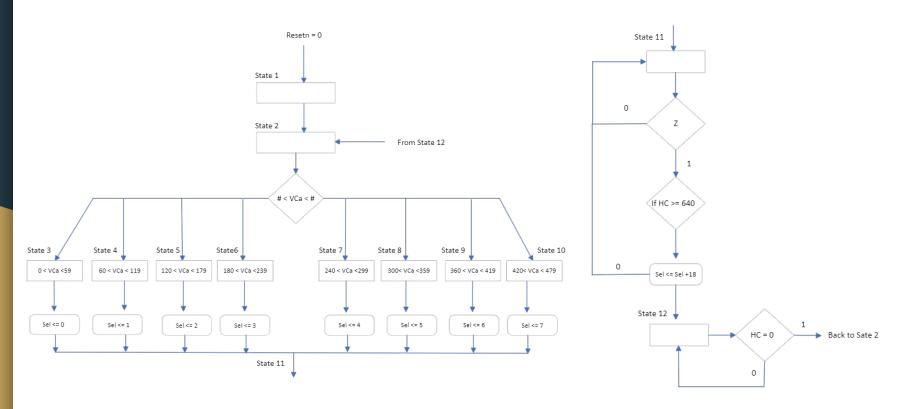
VGA Display Components - Cascaded Registers, Mux & Decoder

Data Processing Cascaded Register Storage Register 0 Input Data Q0 64-to-1 Mux and Decoder 0...7 Register 1 🚽 8...15 Generic Counter Decoder Clock Reg Tick 48...55 Register 7 56...63

VGA Display Components - FSM, Counter and VGA Driver



VGA Display Components - ASM Diagram



DEMO

Thank You!

Questions?

