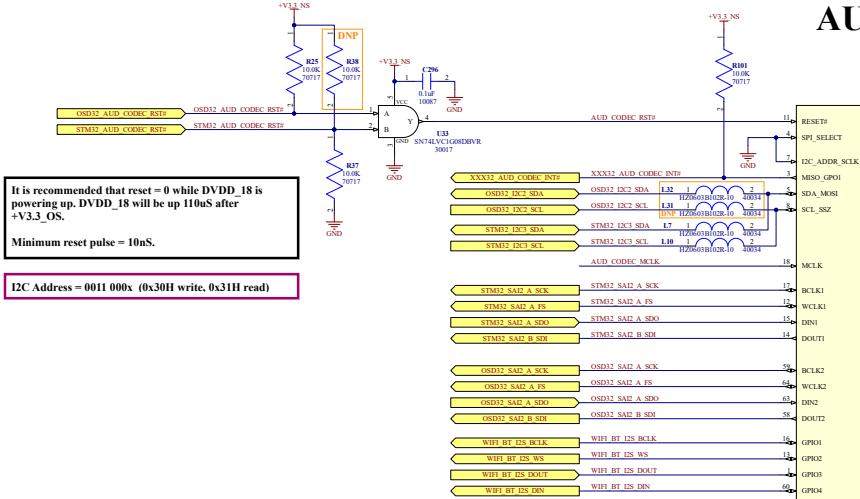
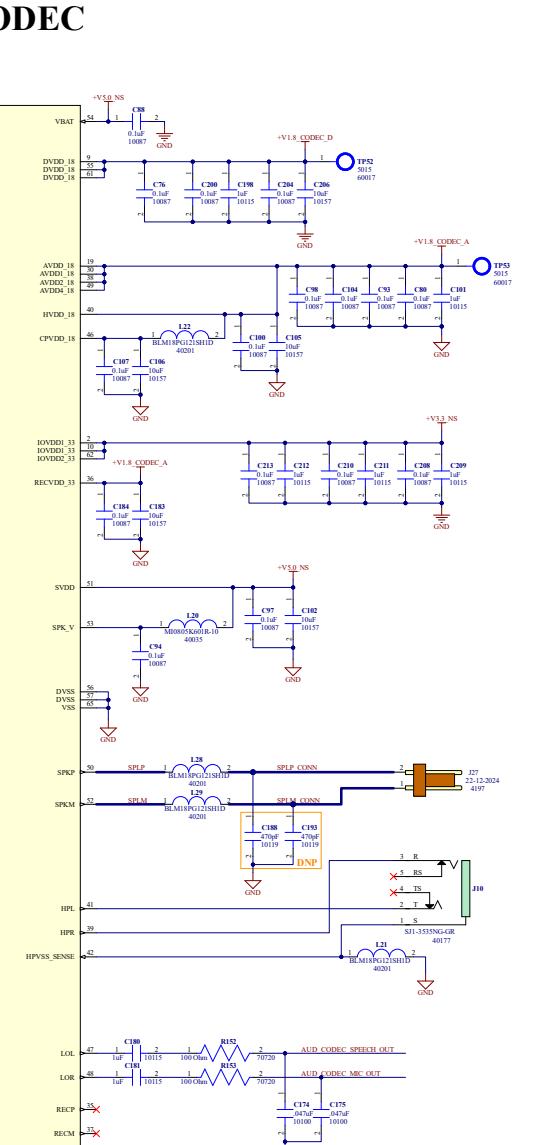


# AUDIO CODEC



**AUDIO CODEC WITH miniDSP & CLASS-D SPEAKER AMPLIFIER**



**LOL output is the main speech output**  
LOL can be routed to HPL and SPK internally  
This allows Speech output on the Internal speaker and Pillow speaker.  
**LOL also connects to LOR which allows us to use audio files as user voice.**  
LOL can be sourced from Left DAC M, Right DAC P, IN1L, IN2L, IN3L, IN4L, INR

**LOR output is the user voice output**  
LOR can be routed to HPR and SPK internally  
The allows the user voice to connect to the expansion modules for voice recognition and to the phone codec.  
**LOR can be sourced from LOL, Right DAC M, IN2L, INR, IN2R, IN3R, and IN4R.**

## EXT MIC IN

The ESP32 WIFI Module I2S timing is derived by the MCLK generated within the ESP32 and must be used to drive the MCLK of the CODEC regardless of master/slave operation. When the ESP32 I2S is used its generated MCLK will serve as the master clock reference for the CODEC, OSD32, and STM32.

If the ESP32 I2S is not used then populate the Mems Oscillator.

For the first build of the boards populate the Mems Oscillator to allow testing audio from the OSD32 and STM32 without the need of the ESP32. When the ESP32 Audio interface is ready swap out the series resistors and make the Oscillator a DNP.

## DIGITAL AUDIO CLOCK

# AUDIO CODEC

