AudioAmp click

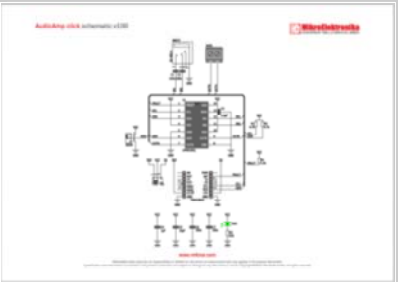
From MikroElektonika Documentation

AudioAmp click functions as a mono audio amplifier. It is driven by a Texas Instruments LM48100Q-Q1 Boomer™ Mono, 1.3W Audio Power Amplifier IC.

AudioAmp click

AudioAmp click	
IC/Module	KN48100Q-Q1 (http://www.ti.com/product/LM48100Q-Q1)
Interface	I2C
Power supply	3.3V, 5V
Website	www.mikroe.com/click/audio-amp (http://www.mikroe.com/click/audio-amp)

Features and usage notes



Schematic also available in PDF (http://cdn-docs.mikroe.com/images/0/0d/AudioAmp_click_sche

AudioAmp click has one 3.5 mm input jack and next to it screw terminals for connecting output wires to a passive speaker. It has dual audio inputs that can be mixed/multiplexed to the device output. Each input path has its own independent, 32-step volume control. The mixer, volume control and device mode selection are controlled through the mikroBUS™ I2C interface.

Fault detection is another important feature of LM48100Q. It senses the load conditions, protecting the device during short circuit events, as well as detecting open circuit conditions. AudioAmp click can work either on a 3.3V or a 5V power supply. There's an additional jumper for selecting the I2C address as well. The open-drain output fault flag. FAULT is routed through the default mikroBUS™ INT pin (0 indicates that a fault condition has occurred). Here's a comprehensive list of LM48100Q's key features, taken from the official data sheet:

- Output Fault Detection
- I2C Volume and Mode Control
- Input Mixer and Multiplexer
- High PSRR
- Individual 32-Step Volume Control
- Short Circuit and Thermal Protection
- Advanced Click-and-Pop Suppression
- Low-Power Shutdown Mode
- Available in 14-Pin HTSSOP Package
- Key Specifications:
  - OutputPower at VDD =5V, RL =8Ω, THD+N ≤ 1% 1.3 W (Typical)
  - Quiescent Power Supply Current at 5 V, 6 mA (Typical)
  - PSRR at 1 kHz 74 dB (Typical)
  - Shutdown current 0.01 µA (Typical)

Programming

The following code snippet demonstrates the click's power on procedure

```
void power_on()
{
    I2C2_Start();
    I2C2_Write( dev_addr );
    I2C2_Write( POWER_ON );
    I2C2_Stop();
}
```

Code examples that demonstrate the usage of AudioAmp click with MikroElektronika hardware, written for mikroC for AVR, dsPIC, PIC and PIC32 are available on Libstock (http://libstock.mikroe.com/projects/view/1871/audioamp-click).

Resources

- Libstock example (http://libstock.mikroe.com/projects/view/1871/audioamp-click)

- LM48100Q-Q vendor's data sheet (http://www.ti.com/product/LM48100Q-Q1)

- mikroBUS™ specifications (http://www.mikroe.com/downloads/get/1737/mikrobus_specification.pdf)