

ATH220 - Haptic Piezo Interface Datasheet

Revision 1.2 – June 2014

Introduction

The ATH220 is a haptic controller based on SEP (Software Enhanced Piezo) technology that enables seamless pulse switches on a wide range of surfaces and provides localized tactile feedback using breakthrough haptic technology. It also provides feedback in the form of light and audio with LED and Buzzer driving capabilities.

SEP is a new and exciting user interface technology that has significant advantages over both traditional mechanical buttons and other surface touch technologies such as capacitive touch sensing. Unlike other touch technologies, it doesn't require additional elements to provide haptic feedback. Input and feedback is provided by an industry standard Piezo element. SEP technology enables designers to use entirely new materials such as metal, wood, fabric and ceramics to create beautiful and seamless user interfaces.

In addition, SEP offers lower manufacturing costs due to the reduction in manufacturing process, reduction in material wastage and the elimination of additional panels needed for a conventional user interface. The inherent robustness of SEP and its ability to operate in harsh environments combined with the field replaceable nature of the SEP module, also reduces aftermarket maintenance and inventory costs.

Main Features – ATH220

- 10 configurable channels: Piezo input, Haptic output, LED output, Buzzer output (channel 10 only)
- Supports up to 5 piezo keys with haptic feedback
- External Haptic control circuitry designed with off-the-shelf components
- Configurable press sensitivity and detection area
- Supply Voltage 3 V to 3.6 V for ATH220 and 5V for the haptic control circuitry
- Configurable feedback patterns
 - Up to 27 individual configurable output patterns applicable to haptics, LEDs and audio
- Configurable input-output feedback link
 - Feedback pattern routing using links between input events and output channels for full UI design flexibility
 - Up to 30 individual input-output links supported
- Serial communication
 - Standard I²C serial communication (address 59h)
 - Maximum clock frequency of 400 kHz
- External interrupt line for host notification
- Support for 20mm piezo discs
- Wide operating temperature range of -40 to +85°C
- RoHS compliant QFN-20 package (4x4 mm)

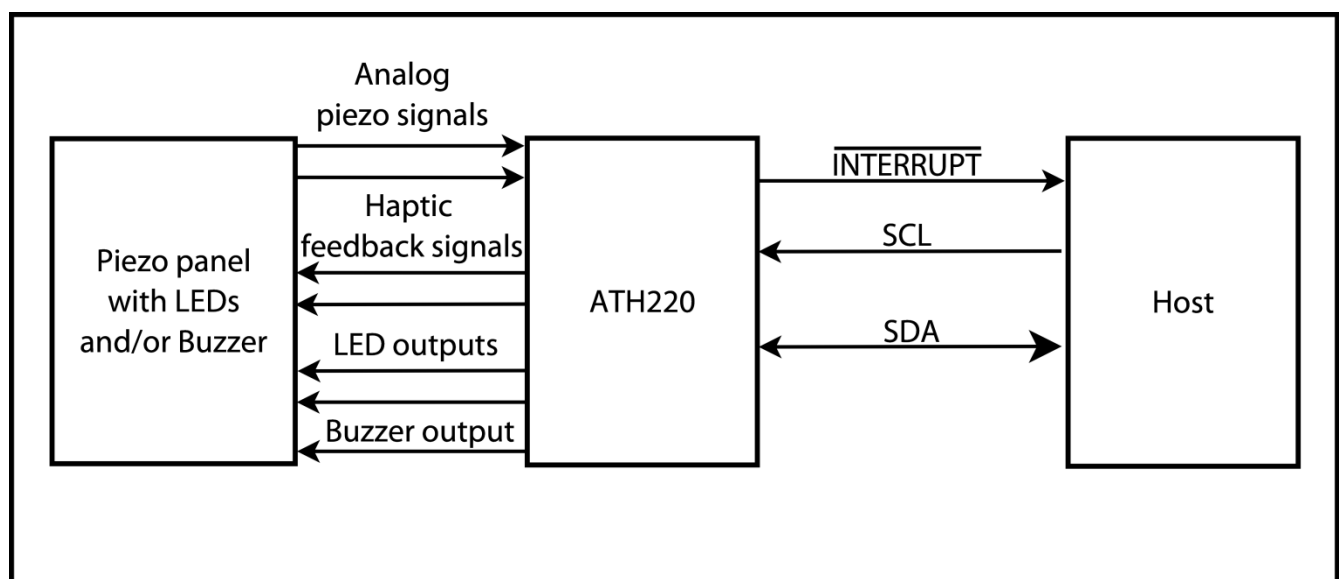


Figure 1. The ATH220 is an interface between an analog piezo panel and a digital host