IQS391

The IQS391 is a haptics driver capable of driving Linear Resonant Actuator (LRA) motors. The device implements an I2C mode for single-byte waveform configuration. The I2C mode features a closed-loop autoresonance algorithm. The autoresonance algorithm matches the resonant frequency of the driven motor in real time. The PWM mode accepts an external Pulse Width Modulated (PWM) signal and a motor drive direction. Both modes implement automatic power mode management and an ultra-low power mode.

OVERVIEW

1.1 Main Features

- **I^{2}C Mode**
    - I^{2}C interface - Up to Fast Mode Plus (1 MHz)
    - Selectable I^{2}C address
    - Single-byte waveform configuration
    - Fire-and-forget interface
    - Trigger haptic pulse either through I^{2}C or with an input pin
    - Real-time closed-loop autoresonance
    - Internal or external H-bridge
    - Selectable LRA drive frequency
- **PWM Mode**
    - Direction and direct PWM input
- **Select between modes using input pin**
- **Internal H-bridge protections**
- **Ultra-low power mode**
- **Automatic power mode management**
- **Design simplicity**
    - PC software for configuration and debugging
- **Supply Voltage:** 1.71 V to 3.6 V
- **QFN20 Package:** (3 × 3 × 0.55 mm) - 0.4 mm pitch

1.2 Applications

- **Mouse wheel scrolling feedback**
- **Trackpads**
- **Doorbells and keypads**