

IQS7221E/G



The IQS7221 ProxFusion® IC's are sensor fusion devices for rotation and angle sensing applications designed for on-axis orientation. ProxFusion® channels are included for integrated UI applications. Two dedicated Quadrature outputs make the product a drop-in replacement for mechanical and optical rotary encoders. The IQS7221E includes a capacitive sensing channel for low power management. While the IQS7221G includes a virtual freewheel UI for more intuitive scrolling, using Inductive sensing to sense when the user finger is resting on the wheel.

OVERVIEW

PRODUCT INFORMATION NOTICE

Main Features

- Highly flexible ProxFusion® device
- Hall effect angle sensor
 - 4 Hall plates
 - Supports on-axis orientation
 - 16-bit absolute angle output
 - < 1° resolution, calculated on-chip
 - Relative/Absolute rotation angle
 - Detect movement and the direction of movement
 - Wide operational range
 - Automatic Tuning Implementation (ATI)
 - Automatic synchronisation with mechanical ratchet
- ProxFusion® Channel
 - Supports one self-capacitive or mutual-capacitive sensor
 - Ultra-low power wake-up on touch
 - Full auto-tuning (ATI) with adjustable sensitivity
- Sensor flexibility
 - Internal voltage regulator
 - No external components required for Hall measurements
 - I2C Interface with IRQ line
- Design simplicity and support
 - PC software for debugging and configuring for optimal performance
 - Magnet and mechanical constraints, guidelines and best practices

- Multiple integrated UIs
 - Proximity and touch events on ProxFusion® channel
 - Proximity wake-up from ultra-low power mode
 - Hysteresis interval mode
 - Event modes with configurable angle-change, interval or touch /prox events
 - Quadrature standalone output for Hall measurements
 - Virtual freewheel UI
- Supply Voltage 2.2 V to 3.5V
- Small packages
 - WLCSP18 (1.62 x 1.62 x 0.5 mm) - interleaved 0.4mm x 0.6mm ball pitch
 - QFN20 (3 x 3 x 0.5 mm) - 0.4mm pitch

Applications

- Scroll-wheels for computer peripherals
- Applications requiring flexible UI options with Sensor Fusion
- Mechanical and optical rotary encoder replacements
- Adjustable knobs
- Motor encoders