1. Overview

1.1. Description

The ISG4100x Mobile Key Scan I/O companion is a dedicated device to unburden a host processor from scanning a matrix-addressed keypad. It communicates with the host through an I2C-compatible or SPI-compatible access bus interface. An interrupt output is available for signaling key-press events.

In the I2C communication, frequencies up to 400KHz bus speed are supported.

In the SPI communication, frequencies up to 10MHz bus speed are supported.

ISG4100x supports a predefined set of commands. These commands enable a host device to keep control over all functions.
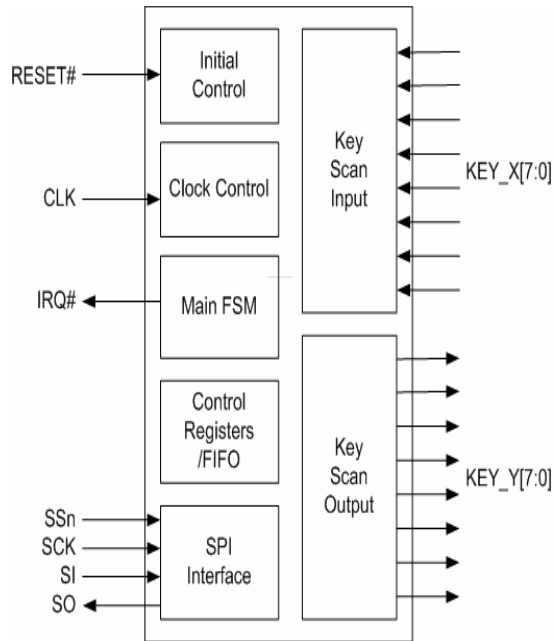
1.1.1.   Block Diagram of ISG4100I

Figure 1 Block Diagram of ISG4100I

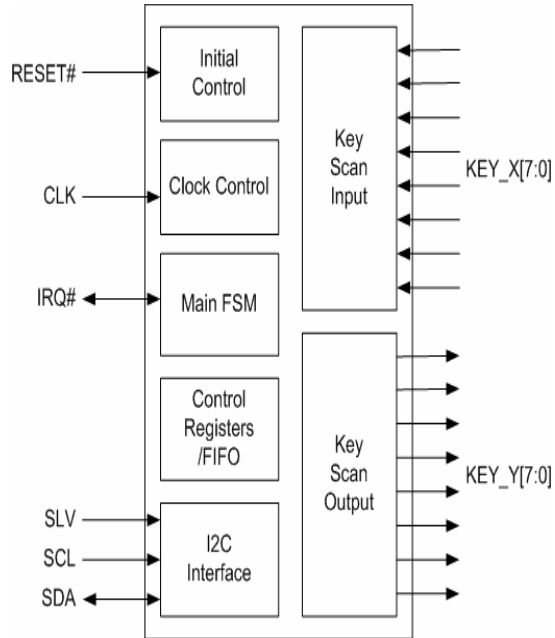## 1.1.2.   Block Diagram of ISG4100S

Figure 2 Block Diagram of ISG4100S

1.2. Features

1.2.1.   Features

- Supports keypad matrices of up to 8 x 8 keys (Max 64 keys)
- Supports multiple-key detection
- Supports long key-press detection
- Key-Scan Event storage in a FIFO buffer for up to 16 events
- Hardware Interrupt at the FIFO Level
- Auto-Sleep and Auto-WakeUp to minimize current consumption
- 8000V ESD protected I/O
- Supports I2C-compatible access bus interface in slave mode up to 400kbps (Fast mode). (ISG4100I only)
- Supports SPI-compatible access bus interface in slave mode up to 10MHz. (ISG4100S only)
- Wake-up from Halt mode an any matrix key-scan event or any activity on the I2C-compatible or SPI-compatible access bus interface
- Small Package : 3.0mm x 3.0mm, 25-FBGA
- Supply Voltage : 2.4V ~ 2.7V, (Typical 2.5V)

1.3. Application Targets

- Mobile Phone
- Personal Digital Assistants (PDAs)
- Smart handheld devices
- Personal Multimedia Player (PMP)
- Etc

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