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## Sensor Hub Product Brief

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### Product Features

- High Performance 32-bit Embedded Controller
- Low power ~4mA in active mode
- System in deep sleep consumes 0.26mA
- 3.3-Volt I/O
- Package
  - 6mm x 6mm body, 84-TFBGA

### Sensor Firmware

- Sensor fusion firmware is licensed from Bosch or Movea. Common features include:
  - Self-contained 9-axis sensor fusion
  - Sensor data pass-through
  - Fast in-use background calibration of all sensors and calibration monitor
  - Magnetic immunity: Enhanced magnetic distortion, detection and suppression
  - Gyroscope drift cancellation
  - Ambient Light Sensor Support
- Windows 8/8.1 certification (HID over I<sup>2</sup>C)
- Easy to implement complete turnkey sensor fusion solution
- Sensor power management
- Sensor agnostic
- Refer to Bosch and Movea sensor fusion firmware addendums for additional sensor fusion details and supported sensors

### Hardware Features

The hardware features in the SSC7102 device include the following:

- Two SMB/I<sup>2</sup>C Controllers
  - Supports I<sup>2</sup>C bus speeds to 400kHz
  - Multi-master Capable
  - Supports Clock Stretching
- Windows 8 HID over I<sup>2</sup>C Support
- LPC Interface
  - HID over LPC Support
- Low Power Modes

### Target Markets

- PCs: Ultrabooks and 2-in-1 Convertibles
- Mobile: Tablets, Smartphones
- Remote Controls, Gaming
- Fitness Monitoring

### Description

The SSC7102 sensor fusion hub is a Windows 8.1 certified, HID over I<sup>2</sup>C, low-power, flexible, turnkey solution. SSC7102 makes implementing sensor fusion easy for ultrabooks, tablets, and smartphones. Microchip partnered with multiple industry-leading sensor manufacturers and sensor-fusion specialists to create this solution, enabling faster time to market without the need for sensor-fusion expertise. The SSC7102 is extremely efficient. It consumes ~4mA while running complex sensor-fusion algorithms, resulting in longer battery life for Windows 8.1 tablet, laptop, ultrabook, and smart phone applications.

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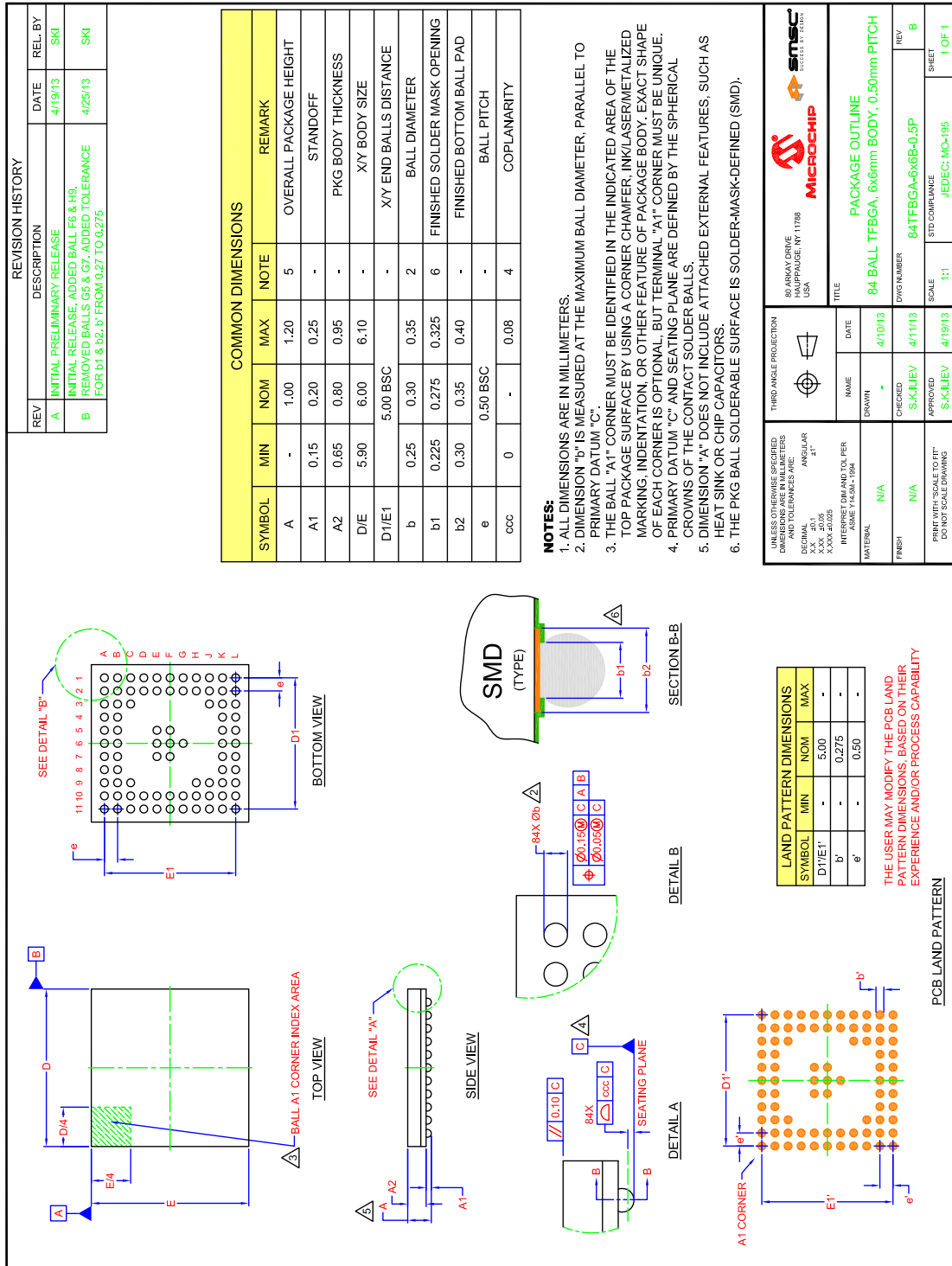
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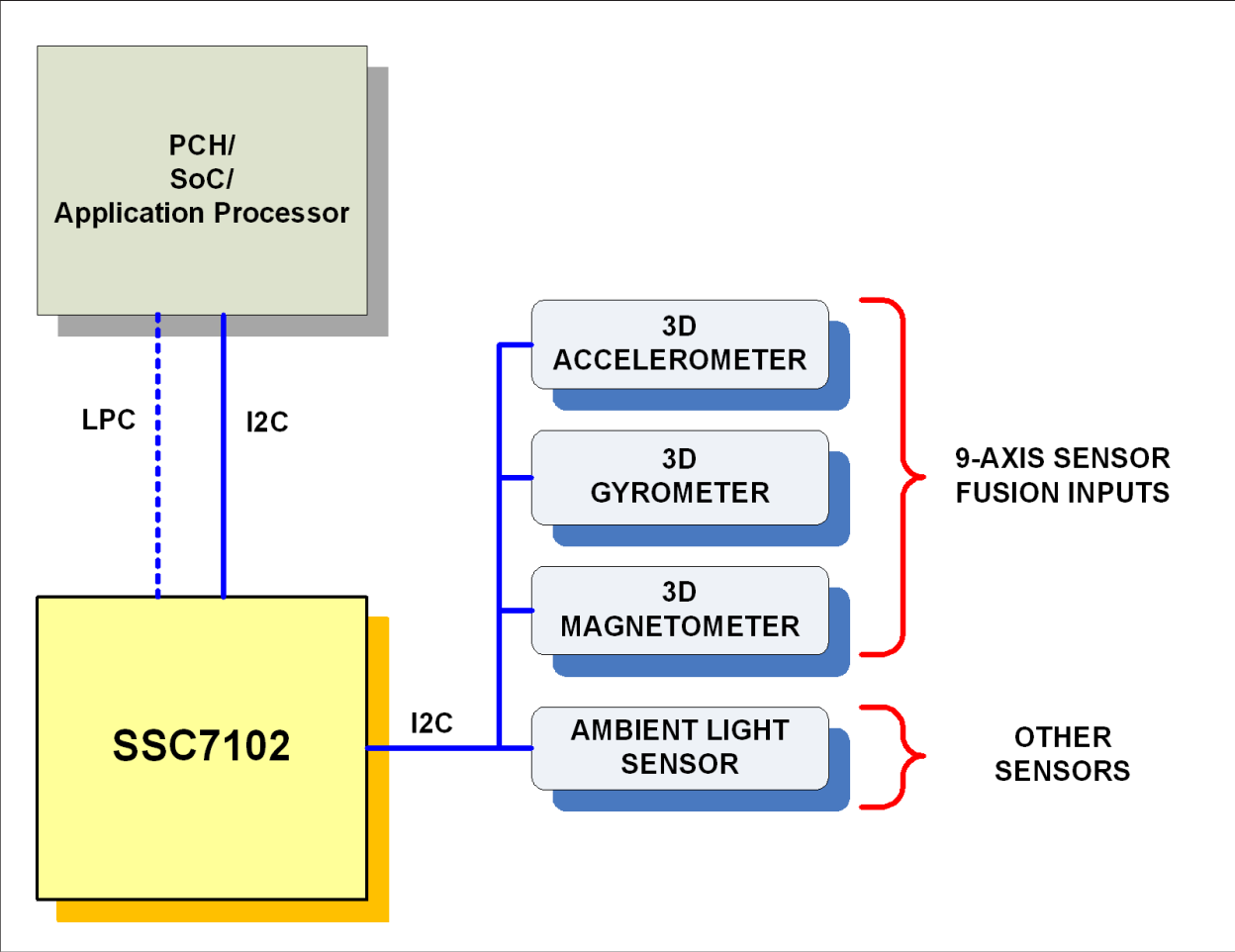
**Note:** For the most current package drawings, see the Microchip Packaging Specification at <http://www.microchip.com/packaging>.

### 84-pin TFBGA Package Outline



# SSC7102

## SYSTEM BLOCK DIAGRAM



## APPENDIX A: REVISION HISTORY

| Revision | Section/Figure/Entry                          | Correction   |
|----------|---|--|
| REV B    | Features                                      | Wording of first bullet under Product Features modified for clarity. |
|          | <a href="#">Product Identification System</a> | URL in Note 2 modified.  |
| REV A    | Document release                              |  |

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|---|---|---|---|------------------------|---|---------------------------|
| Device Series   |   | Package   |   | Sensor Fusion Firmware |   | Tape and Reel Option      |
| <b>Device:</b><br><br><b>Package:</b><br><br><b>Sensor Fusion Firmware:</b><br><br><b>Tape and Reel Option:</b> | SSC7102 <sup>(1)</sup><br><br>GQ = 84 pin TFBGA <sup>(2)</sup><br><br>AA0 = Bosch 9-axis Sensor Fusion<br>BA0 = Movea 9-axis Sensor Fusion<br><br>Blank = Tray packaging<br>TR = Tape and Reel <sup>(3)</sup> | <b>Examples:</b><br><br>a) SSC7102-GQ-AA0 = 84-TFBGA, Bosch 9-axis sensor fusion.<br><br>b) SSC7102-GQ-BA0 = 84-TFBGA, Movea 9-axis sensor fusion.<br><br><b>Note 1:</b> These products meet the halogen maximum concentration values per IEC61249-2-21.<br><br><b>Note 2:</b> All package options are RoHS compliant. For RoHS compliance and environmental information, please visit <a href="http://www.microchip.com/pagehandler/en-us/aboutus/">http://www.microchip.com/pagehandler/en-us/aboutus/</a><br><br><b>Note 3:</b> Tape and Reel identifier only appears in the catalog part number description. This identifier is used for ordering purposes and is not printed on the device package. Check with your Microchip Sales Office for package availability with the Tape and Reel option. |   |                        |   |                           |

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