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## Sensor Hub Product Brief

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### Product Features

- High Performance 32-bit Embedded Controller
- Low power
  - 3.75mA (typ) in active mode
  - 1.0mA (typ) in idle mode
- System in deep sleep consumes 0.27mA (typ)
- 3.3-Volt I/O
- Package
  - 6mm x 6mm body, 84-TFBGA

### Sensor Firmware

- 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
- Tablets
- Remote Controls, Gaming

### 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 convertibles. 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. Low average current while running complex sensor-fusion algorithms results in longer battery life for multiple applications.

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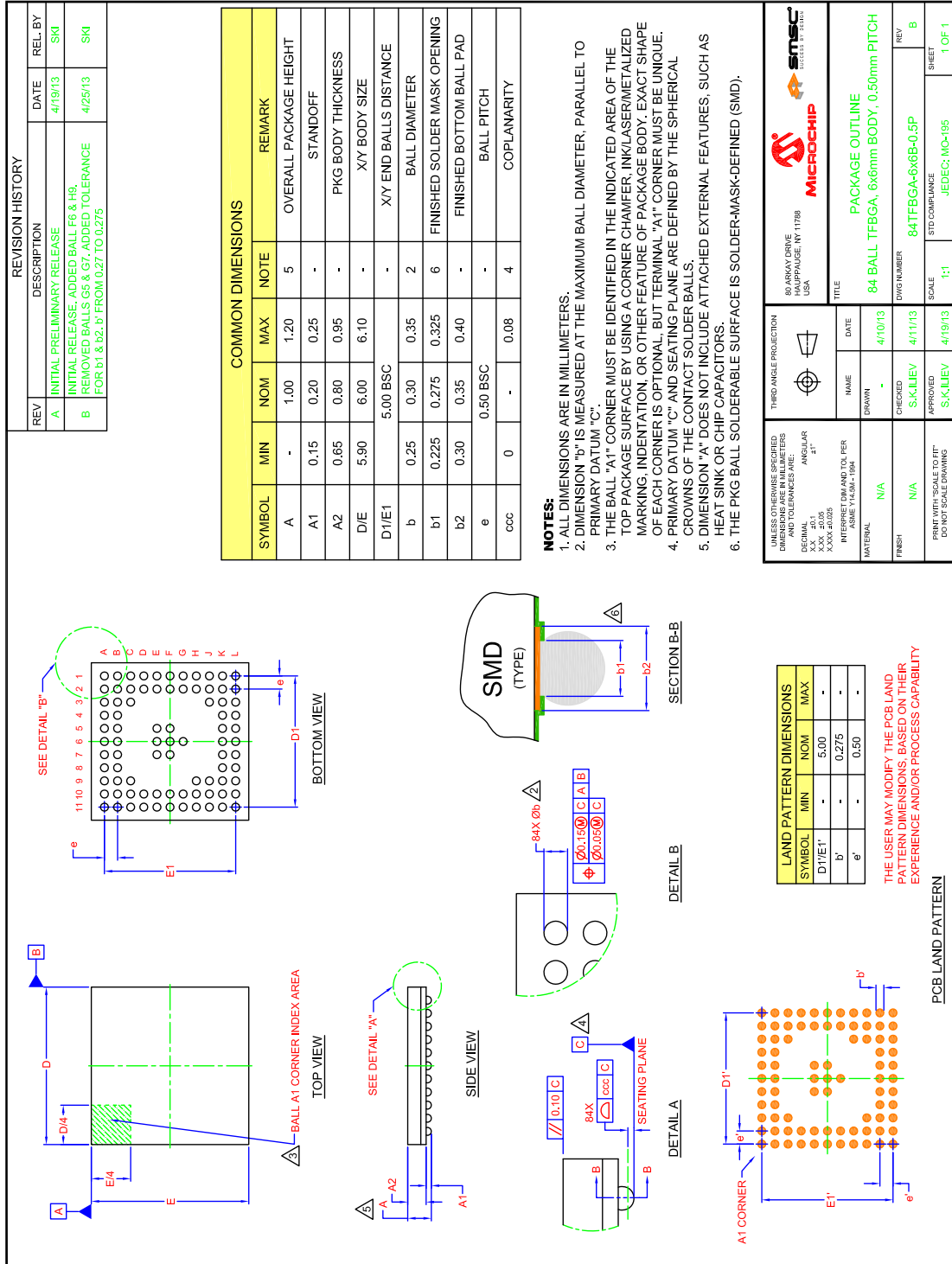
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## PACKAGE OUTLINE

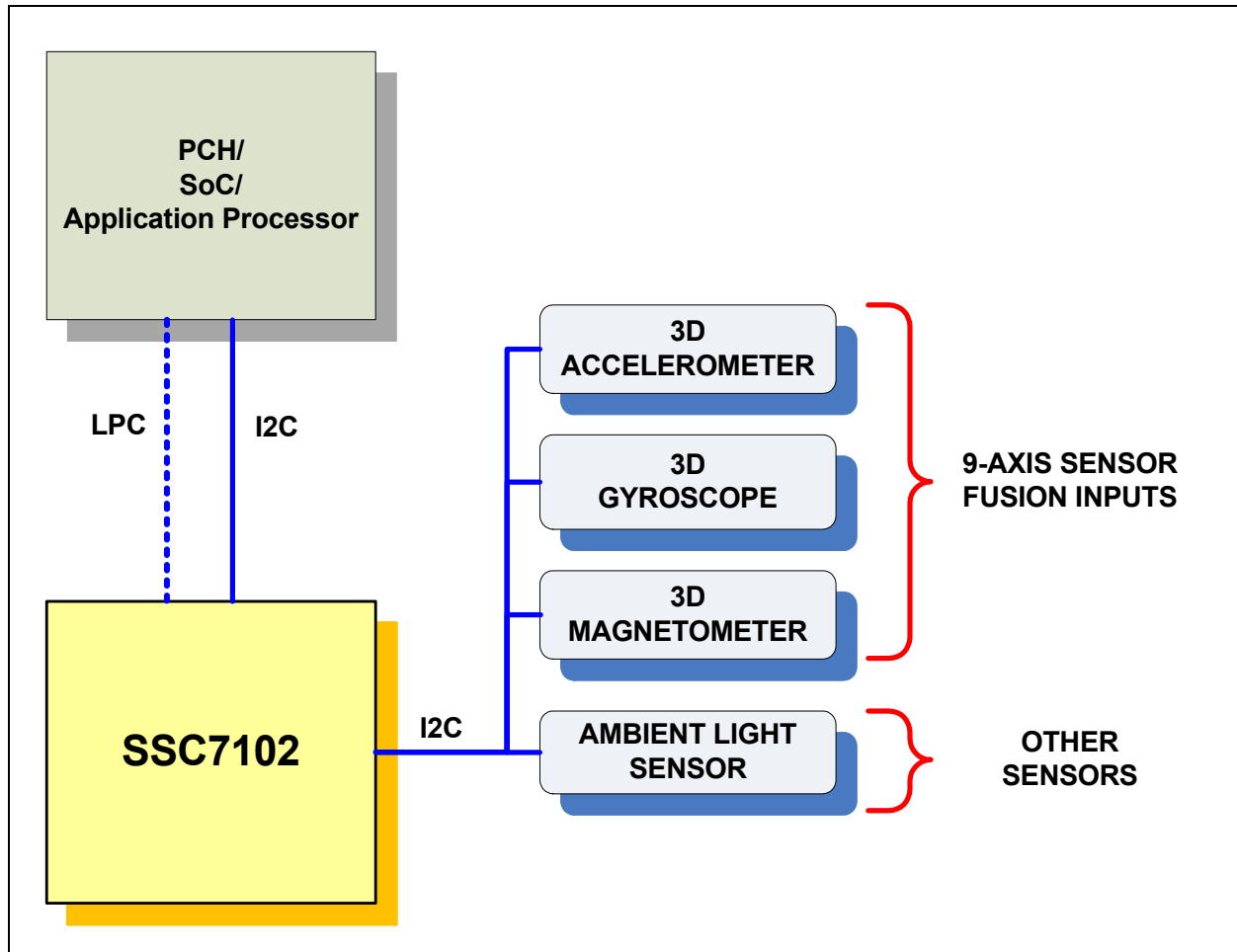
Note: For the most current package drawings, see the Microchip Packaging Specification at <http://www.microchip.com/packaging>.

### 84-pin TFBGA Package Outline



# SSC7102

## SYSTEM BLOCK DIAGRAM



## APPENDIX A: REVISION HISTORY

| Revision               | Section/Figure/Entry                          | Correction   |
|------------------------|---|--|
| DS00001658C (10-22-14) | <a href="#">Product Identification System</a> | Bosch order number changed from "AA0" to "AB0".                      |
| 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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| <u>PART NO.</u> <sup>(1)</sup>   | - | <u>XXX</u> <sup>(2)</sup> | - | <u>XXX</u>             | - | <u>[X]</u> <sup>(3)</sup>   |
|--|---|---------------------------|---|------------------------|---|---|
| Device Series  |   | Package                   |   | Sensor Fusion Firmware |   | Tape and Reel Option  |
| <b>Device:</b> SSC7102 <sup>(1)</sup><br><br><b>Package:</b> GQ = 84 pin TFBGA <sup>(2)</sup><br><br><b>Supported Sensors:</b><br>AB0 = Bosch BMC150 (Accelerometer + Magnetometer), Bosch BMC160 (Gyroscope)<br>BA0 = Invensense MPU-6500 (Accelerometer + Gyroscope), AKM AK8963C (Magnetometer), Intersil ISL29029 (Ambient Light)<br><br><b>Tape and Reel Option:</b><br>Blank = Tray packaging<br>TR = Tape and Reel <sup>(3)</sup> |   |                           |   |                        |   | <b>Examples:</b><br>a) SSC7102-GQ-AB0 = 84-TFBGA, support for Bosch sensors.<br>b) SSC7102-GQ-BA0 = 84-TFBGA, support for Invensense, AKM, and Intersil sensors.<br><br><b>Note 1:</b> These products meet the halogen maximum concentration values per IEC61249-2-21.<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/ehs.html">http://www.microchip.com/pagehandler/en-us/aboutus/ehs.html</a> .<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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ISBN: 9781632767202

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