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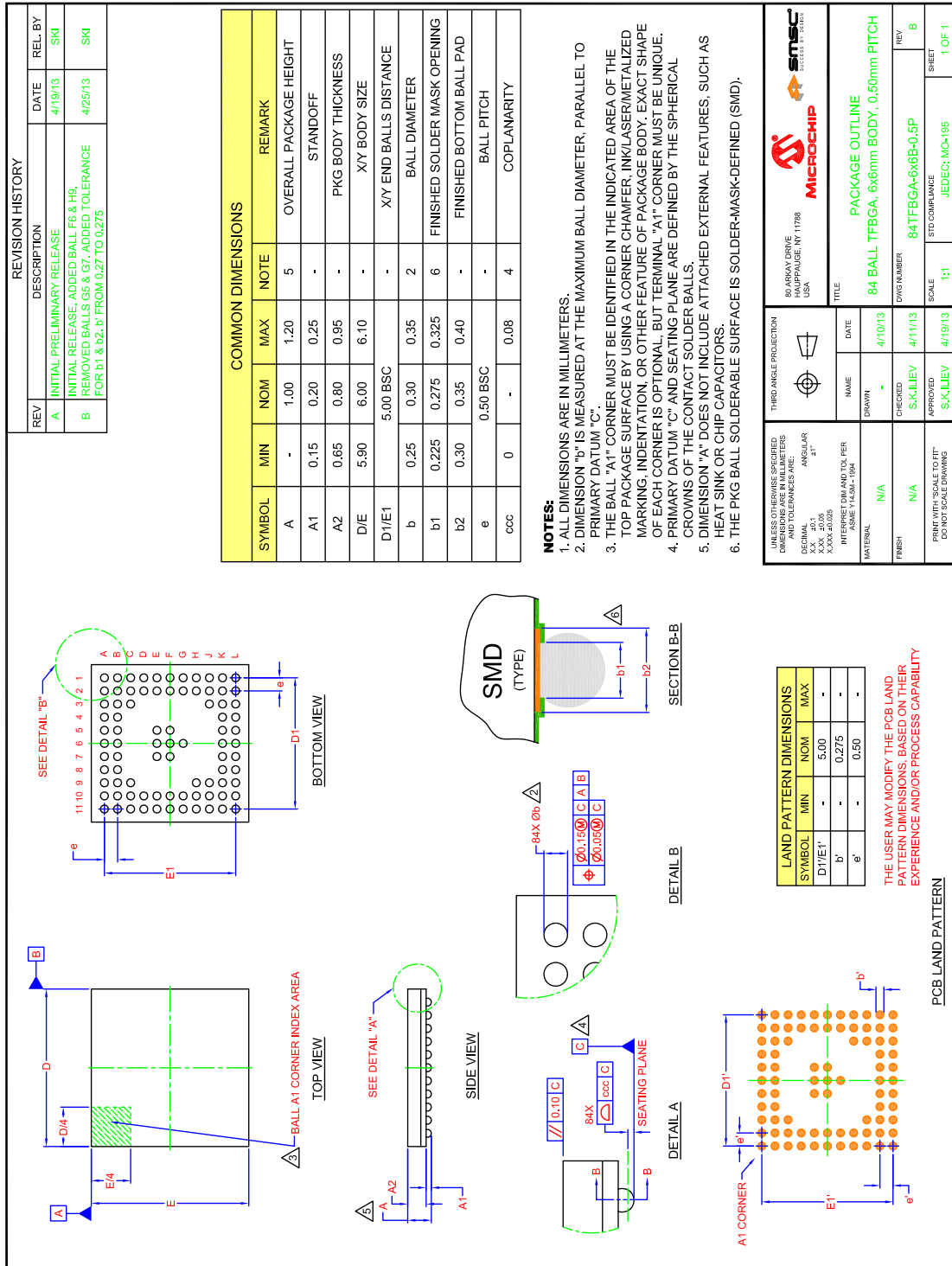
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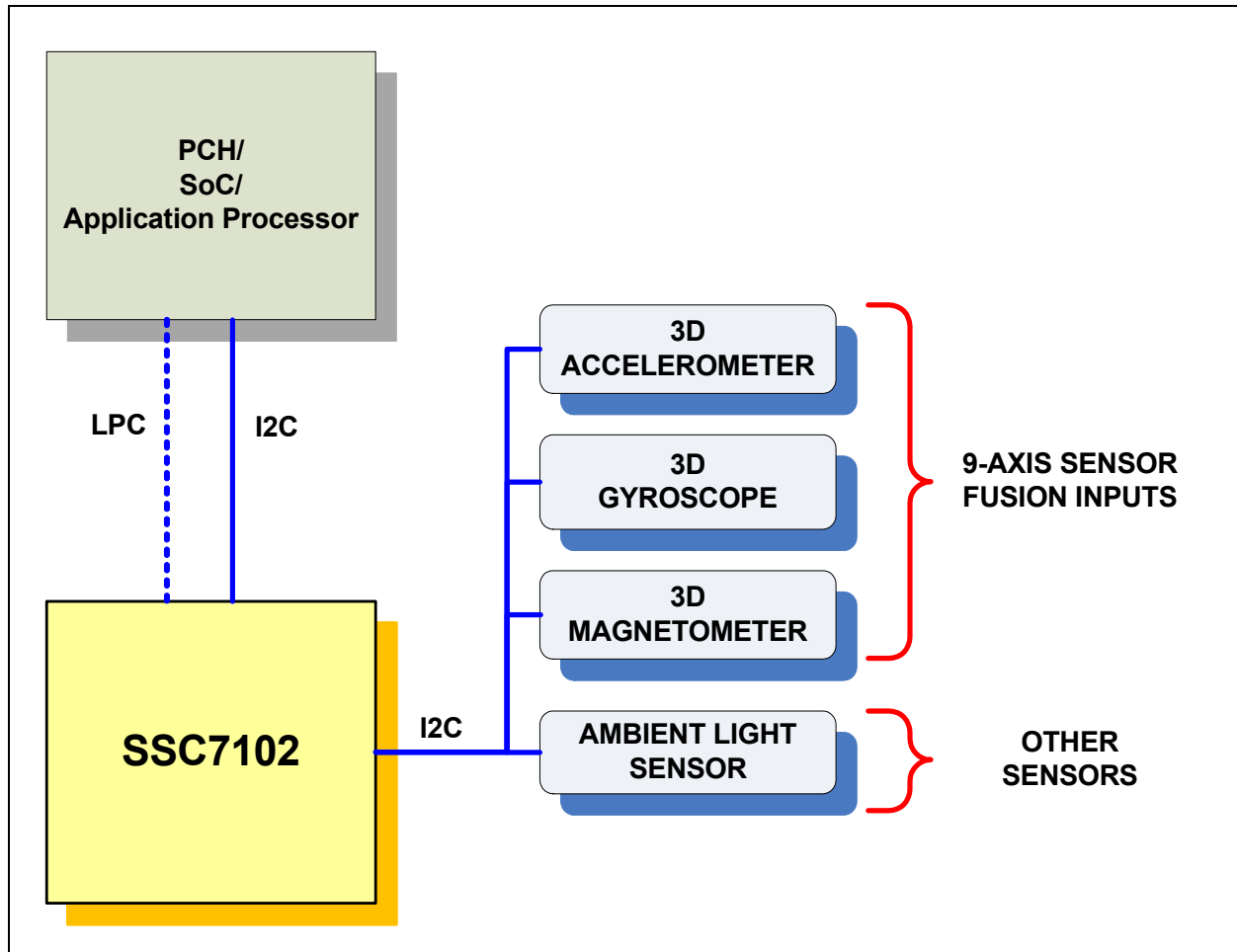
**Note:** For the most current package drawings, see the Microchip Packaging Specification at <http://www.microchip.com/packaging>.

### 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>				
<b>Package:</b>		GQ = 84 pin TFBGA <sup>(2)</sup>				
<b>Supported Sensors:</b>		AB0 = Bosch BMC150 (Accelerometer + Magnetometer), Bosch BMC160 (Gyroscope) BA0 = Invensense MPU-6500 (Accelerometer + Gyroscope), AKM AK8963C (Magnetometer), Intersil ISL29029 (Ambient Light)				
<b>Tape and Reel Option:</b>		Blank = Tray packaging TR = Tape and Reel <sup>(3)</sup>				

**Examples:**

- a) SSC7102-GQ-AB0 = 84-TFBGA, support for Bosch sensors.
- b) SSC7102-GQ-BA0 = 84-TFBGA, support for Invensense, AKM, and Intersil sensors.

**Note 1:** These products meet the halogen maximum concentration values per IEC61249-2-21.

**Note 2:** All package options are RoHS compliant. For RoHS compliance and environmental information, please visit <http://www.microchip.com/pagehandler/en-us/aboutus/ehs.html>.

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