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**FORM 6-K**

**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

For the month of March 2010 No. 4

**TOWER SEMICONDUCTOR LTD.**

(Translation of registrant's name into English)

**Ramat Gavriel Industrial Park**  
**P.O. Box 619, Migdal Haemek, Israel 23105**  
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F  S

Form 40-F  £

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes  £

No  S

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On March 10, 2010, the registrant announces TowerJazz Joins IPL Alliance to Achieve Interoperability of Process Design Kits for Analog/Mixed-Signal Designs.

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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**TOWER SEMICONDUCTOR LTD.**

Date: March 10, 2010

By: /s/ Nati Somekh Gilboa

Name: Nati Somekh Gilboa

Title: Corporate Secretary

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## **TowerJazz Joins IPL Alliance to Achieve Interoperability of Process Design Kits for Analog/Mixed-Signal Designs**

**MIGDAL HAEMEK, Israel, and NEWPORT BEACH, Calif., March 10, 2010** – TowerJazz, the global specialty foundry leader, today announced it has joined the IPL Alliance, an organization chartered with establishing an interoperable custom design ecosystem. The IPL Alliance, comprised of major EDA and foundry companies, has devised the first open standard for interoperable Process Design Kits (iPDKs) for analog/mixed-signal designs. The iPDK is based on the OpenAccess database and uses standard languages and unified architecture that ensure interoperability among all EDA vendor tools. Engineering teams only need to develop a single PDK for each process node which reduces development costs, shortens design cycles and provides designers with earlier access to advanced process technologies across multiple tools.

TowerJazz, a leader in specialty processes and design enablement, is developing best-in-class iPDKs that are derived from this standard. The benefits of iPDKs for customers over traditional proprietary PDKs include improved performance, increased reuse and portability through use of standards and broader EDA tool support. The pilot process for TowerJazz iPDKs will be its TS18 power management process, however the roadmap will cover all of its processes and TowerJazz customers will have the flexibility to choose which types of EDA flow to use.

“We are pleased a leading specialty foundry like TowerJazz has joined the IPL Alliance to help promote standardization of PDKs, open innovation, and improved productivity and efficiency for analog and mixed-signal designs. RF and consumer devices are demanding increased integration so the analog portion is now the gating factor on many, if not all, SoC designs. Standardization can reduce PDK development cost while providing designers quicker access to complex process technologies,” said Jingwen Yuan, President of IPL Alliance and Strategic Alliance Manager at Synopsys.

“Our industry-leading design enablement capabilities set us apart and provide our customers with first time design success and a significant competitive market advantage. Joining the IPL Alliance further demonstrates our commitment to offering the industry’s best models and tools. The iPDK standard allows us to provide our customers with accelerated access to our advanced specialty technologies in a flexible way, resulting in fast product design timelines,” said Ori Galzur, Vice President, VLSI Design Center at TowerJazz.

### **Availability**

TowerJazz plans to offer the first iPDK by June 2010.

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**About TowerJazz**

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the global specialty foundry leader and its fully owned U.S. subsidiary Jazz Semiconductor, operate collectively under the brand name TowerJazz, manufacturing integrated circuits with geometries ranging from 1.0 to 0.13-micron. TowerJazz provides industry leading design enablement tools to allow complex designs to be achieved quickly and more accurately and offers a broad range of customizable process technologies including SiGe, BiCMOS, Mixed-Signal and RFCMOS, CMOS Image Sensor, Power Management (BCD), and Non-Volatile Memory (NVM) as well as MEMS capabilities. To provide world-class customer service, TowerJazz maintains two manufacturing facilities in Israel and one in the U.S. with additional capacity available in China through manufacturing partnerships. For more information, please visit [www.towerjazz.com](http://www.towerjazz.com).

**Safe Harbor Regarding Forward-Looking Statements**

This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements. A complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect Tower and/or Jazz's business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4 and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority and Jazz's most recent filings on Forms 10-K and 10-Q, as were filed with the SEC, respectively. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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