

# siliconindia

PUBLISHED SINCE 1997

BUSINESS & TECHNOLOGY IN THE U.S. & INDIA MARCH - 2015 SILICONINDIA.COM

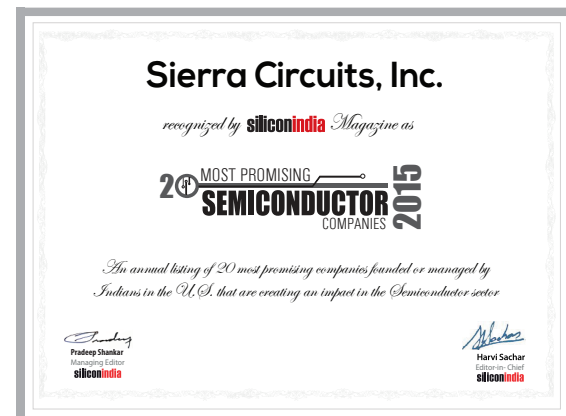
## 20 Most Promising Semiconductor Companies

The semiconductor industry came to the forefront of the technology drive with its central theory of devising electronics better and cheaper than what redefined state-of-the-art few months earlier. It led to the modernization of gadgets and devices, emphasizing on the durable contingent mechanism that further stimulated the world to anticipate for more reliable devices. With the course of time, these devices shrunk in size leaving the trace of old predicaments for finest and fastest equipments in minimum budget. Right from transistors, solar cells to silicon controlled rectifier and digital and analog circuits, the industry reflected the three dogmas of smaller, faster and cheaper, dignifying the rising call for even more refined and economical semiconductor devices.

Today, computers are transforming into laptops and further to handtops, justifying the industry's potential to acquire the intelligence of inducing more and more transistors onto the chip. The industry not only altered the technological outlook

around the world but also hit the global market with its outreaching sales across the globe. Many companies around the world, serving semiconductor products, have enlisted their names as top notch semiconductor solution providers. In the last few months, a distinguished panel of the industry's top CEOs, CIOs, VCs, analysts and industry experts including siliconindia editorial board identified the eminent companies that primarily serve the semiconductor industry. They have shortlisted the ones that are at the forefront of rendering revolutionized semiconductor solutions and services.

In the selection process, they delved into the business practices, services and compared them against the industry standards to ensure their eligibility and superior potentials in the semiconductor industry. Therefore, in this edition of siliconindia, we bring to you the "20 Most Promising Semiconductor Companies-2015", featuring the companies creating an impact in the semiconductor industry.



**Company:**  
Sierra Circuits, Inc.

**Description:**  
A provider of innovative PCB technologies for the semiconductor industry.

**Key Person:**  
Ken Bahl,  
CEO

**Website:**  
[www.protoexpress.com](http://www.protoexpress.com)

### Sierra Circuits

## Empowering the Semiconductor Industry with Time-to-Market Advantages



The real purpose of any organization is to work toward identifying the core challenges in the industry and deploy differentiated approach for tackling them. Headquartered in the Silicon Valley, Sierra Circuits continues to be successful throughout the industry's most critical challenges due to their keen focus on semiconductors.

"The current semiconductor landscape requires high density printed circuit boards (PCBs) and substrates with ultra-fine features capable of carrying a new breed of fine pitch chip scale devices. The challenge is perfecting PCB technologies to be able to carry devices directly onto the PCB chip scale without the need for intermediate packaging technology or interposer boards," states Ken Bahl, Sierra Circuits CEO.

Through their sustained R&D efforts, Sierra Circuits has developed innovative and unconventional PCB technologies capable of manufacturing cost-effective fineline PCBs. The PCBs manufactured using these unconventional technologies are comprised of ultra fine features such as 25 micron line widths and space with significant yields. As a result, lowering the cost of fine-featured PCBs becomes an easy task. This technology has the potential to shorten the manufacturing cycle time and lower the cost of PCB production. Furthermore, it is equipped with the potential for improving the electrical performance of the electronic circuitry at very high frequencies.

Sierra Circuits has served over 20,000 designers, innovators and technical experts since 1986, having manufactured and assembled high-end prototype PCBs on fast turntimes. With over 45,000 square feet comprising their PCB manufacturing facility and a 10,000 square foot PCB assembly facility, Sierra turns the highly complex and multiple-step process of PCB manufacturing into a simpler one. Another aspect that enables Sierra to maintain an edge over competitors is their constant research and development toward improving the manufacturing processes and developing cutting edge technology. "We sell time and technology. Our production turnaround time is faster than our competitors and we have always been ahead with respect to the use of technology. This is the way Sierra has minimized local and offshore competition," Ken continues.

Sierra Circuits recently worked with the Bates Research and Engineering Center at Massachusetts Institute of Technology's Brookhaven National Laboratory Relativistic Heavy Ion Collider (RHIC). They designed readout electronics for the STAR experiments' upgraded detector system. Originally, the prototype readout module were five APV25 chips wire-bonded directly to a PCB. The first prototype module distributed the chips' inputs through bone wires to edge connectors. It was a composite, two boards having been laminated together, and allowed for no rework once the chips were bonded to the board. As a result, it the fabrication and assembly was very expensive. Sierra Circuits fabricated the BGA substrates and the tracker module boards, which each monitor 640 channels. This has helped achieve a 94 percent yield.

Sierra Circuits is certified for the following quality standards and procedures: ISO:90001, ISO:13485 (for medical devices), and MIL-SPEC (for the military, defense and aerospace industries). They have been servicing the needs of defense, aerospace, semiconductor and mission-critical applications for several decades.

"Because of our extensive use of technology, there is minimal room for human-error in Sierra's manufacturing process. Besides, no other competitors can match the levels of quality extended by Sierra towards technically advanced PCBs," comments Ken. Through 2015, many of the patented products from Sierra will be introduced to the market. "These technologies are truly revolutionary and could drive the future electronic industry," states Ken. 