



CheckSum Corporate Backgrounder February 2007

Contact:
Charla Gabert
Castle Hill Communications, Inc.
925.256.6723 (CA)
charlagabert@yahoo.com

CheckSum Overview

CheckSum (checksum.com) is a leading supplier of low-cost circuit board test and ISP device programming solutions to the worldwide electronics manufacturing industry. Its products and services include systems, fixtures, and programs that detect manufacturing process faults on complex SMT printed circuit assemblies and sub-systems that provide value-added operations such as In-System Programming of digital chips. CheckSum has been delivering reliable, cost-effective, and flexible test solutions to OEMs and contract manufacturers for 19 years. With an installed base of over 3,000 test systems at more than 200 manufacturing sites in over 40 countries, CheckSum helps customers ranging from automotive electronics manufacturers to global EMS providers reduce their total test and manufacturing costs and increase their profit margins.

Based in Arlington, Washington, CheckSum is the only North American Automated Test Equipment (ATE) supplier to offer turnkey test program and fixturing packages and an engineering-oriented approach to customer support, giving customers a cost-saving alternative to traditional ATE suppliers. Satisfied customers helped CheckSum win an *Evaluation Engineering* "Readers' Choice" award in the category of ATE and a "Best in Test" Honorable Mention from *Test and Measurement World*. Shipping hundreds of testers each year, CheckSum continues to grow steadily.

CheckSum Products & Services

CheckSum test solutions include low-cost in-circuit, combinational, and functional testers starting at \$10,000; bed-of-nails fixtures (primarily pneumatic; single- and double-sided); test programs including on-board ISP device programming; and responsive telephone support. As North America's only full service board test vendor, CheckSum reduces ongoing support and applications cost with affordable "fast-turn" turnkey fixturing and programming services and direct, "engineer-to-engineer" technical support. Our "Solutions on Call" philosophy, which delivers capabilities such as on-board ISP programming and boundary-scan test when and where they're needed, is just one reason numerous customers have commended CheckSum as responsive and easy to do business with.

Analyst™ ICT Systems. CheckSum's Analyst systems provide the low-cost test capability that's needed to match today's fault spectrum. CheckSum's low-cost Analyst series in-circuit testers feature straightforward system architecture and an

easy-to-use interface, which reduce system complexity and cost. Their flexibility and ease of use compared to traditional “big iron” ICT makes them especially well suited in remote manufacturing locations where in-depth test engineering expertise may be limited. CheckSum Models include: Analyst ems™ low-cost ICT, Analyst ils™ low-cost in-line tester, Analyst ems+ft™ low-cost ICT and functional tester and the Analyst fcs™ fixture-compatible tester for users of all models of the Agilent 3x7x series.

CheckSum’s Value Proposition

CheckSum board testers, ISP programming systems and turnkey services are the optimum match to today’s circuit board manufacturing test requirements that include in-circuit, boundary-scan, power-on functional test and on-board ISP programming for about half the total cost of owning and using traditional ‘big iron’ in-circuit testers.

Philosophy Underlying the Value Proposition

1. ISP programming requirements, fewer test engineering resources and escalating time pressures converge at in-circuit test, demanding test plan flexibility, ease of use, and tester capabilities matched to the fault spectrum of today’s complex boards.
2. Traditional “big iron” in-circuit testers excelled at identifying digital defects—the major board test challenge during the 1980’s and 1990’s—but in light of today’s near zero digital defect rates, these are increasingly irrelevant capabilities.
3. Today, vectorless test and Boundary Scan—technologies—better suited for the current fault spectrum of primarily manufacturing process defects—have effectively supplanted digital vector test.
4. ‘Big iron’ in-circuit testers continue to impose substantial costs in the form of added hardware and software complexity, degraded reliability and reduced ease of use even when their digital vector test capabilities are not used.
5. In addition, In-System Programmable (ISP) chips, are proliferating and the volume of data to be programmed in each chip is expanding geometrically, forcing test engineers to move programming off their big-iron ICT due to inadequate throughput.
6. Demands on test engineering continue to increase—driven by shorter product life cycles and faster time-to-volume requirements coupled with increasingly complex test plans that demand numerous ancillary tests. At the same time available budget and personnel resources have declined, intensifying the time and cost pressures on test engineers.
7. The bottom line is that while in-circuit test remains a cost effective technology and will continue to be the primary means of electronics manufacturing test, its key requirements have shifted away from expensive—and time-consuming to use—channel multiplexing and vector test technologies to low cost and easy to

use platforms that are flexible enough to perform any mix of in-circuit and functional test, boundary scan and high throughput ISP programming.

Management Team

CheckSum is a growing, privately held company that is committed to the board test industry. In 2003, CheckSum was acquired from its founders by a group of private investors who saw the opportunity of expanding the role of low-cost ICT within the electronics manufacturing market. CheckSum represented a unique opportunity because it had developed the best low-cost ICT products and had primarily relied on word-of-mouth advertising, having grown steadily for 17 years without ever having a sales force. The investors found that CheckSum's satisfied customer base was unique in the board test industry and are committed to expanding CheckSum's presence by introducing CheckSum's products to the numerous potential customers who may not know that there is a viable alternative to traditional "big iron" ICT.

CheckSum's owners looked at over 200 manufacturing companies before acquiring CheckSum in 2003. The ownership group consists of over a dozen business executives who lead and advise numerous successful private and public companies.

John VanNewkirk, CheckSum's President and CEO, believes that the time has come for economics to play a more significant role in the selection of in-circuit testers, as they have reached the mature phase of their development and the performance of low-cost ICT and high-cost ICT is identical for most boards.

VanNewkirk led the acquisition of CheckSum by an investor group, Teton Industries, in 2003. Earlier, VanNewkirk led a successful turnaround of a steel service center in southern China for Van Shung Chong Holdings (VSC), a publicly listed company in Hong Kong with annual revenue of approximately US\$ 250 million. Prior to joining VSC, VanNewkirk served as a management consultant with Bain & Company in Hong Kong and San Francisco. During his years at Bain, VanNewkirk developed and implemented growth strategies for Fortune 500 companies. His experience across a spectrum of industries included cost reduction, process re-engineering, new market development, distribution strategy and implementation, and corporate strategy.

VanNewkirk has a Bachelor of Sciences (Honors) from Brown University and an M.B.A. from Harvard Business School.

Board of Directors

John VanNewkirk – President and CEO of CheckSum.

Steve Wheelwright – Director. Professor Wheelwright is the Baker Foundation Professor and Senior Associate Dean, Director of Publications Activities at the Harvard Business School. Professor Wheelwright is a noted authority on Technology and Operations Management.

Richard Van Saun – Director. Mr. Van Saun retired in 1999 from Danaher Corporation, where he served as General Manager, Industrial Group, following Danaher's acquisition of Fluke Corporation. Previously, Mr. Van Saun was a Senior Vice President at Fluke, where he held various senior engineering and management roles during a 35 year career. Early in his career, Mr. Van Saun was the Project Engineer for Fluke's first Digital Multimeter.

Rick Stratford – Director. Mr. Stratford is a partner at Peterson Partners, a private equity firm with over \$250 million under management and more than 30 portfolio companies. Mr. Stratford joined Peterson Partners in 1999 after working for Hewlett Packard and Arthur Andersen. He holds an MBA from Wharton and a Masters of Accountancy from Brigham Young University.