

**Tuesday 3/11/14 11:00am**

## **THE MARKET IS OPEN**

The BiTS Workshop just wouldn't be the BiTS Workshop without at least one presentation on the test and burn-in marketplace. In this year's three presentations, first we'll hear about the technical and market forces that are shaping the future of test and burn-in, particularly the challenges of industry cycles with the never ending quest for reduced costs. Next up will be our own Fred Taber, with his fourth annual Socket Report on the size of the market, whether its shrinking or growing, and companies that are leading the charge. This session's final paper hones in on a market technology trend with one innovative high-density package-on-package (PoP) solution requiring test hardware to accommodate fine pitch wire-tip interconnects. Socket and test hardware development and verification studies are underway to take this technology to high volume manufacturing.

### **The Technical and Market Forces Shaping the Future of Test and Burn-In Sockets**

John West—VLSI Research, Inc.



This Paper

### **Socket Marketplace Report**

Fred Taber—Taber Consulting

### **Manufacturing Readiness of Bond Via Array (BVA™) Technology for Fine-Pitch Package-on-Package (PoP)**

Rajesh Katkar, Rey Co, Wael Zohni—Invensas Corporation

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## Socket Marketplace Report

**Fred Taber**  
Taber Consulting



2014 BiTS Workshop  
March 9 - 12, 2014

Frederick L. Taber  
TEST TECHNOLOGY  
CONSULTING

### Content

- Acknowledgement
- Annual Report
- Test & Burn-in Socket Data
- Wrap-up



## Acknowledgements

- 4<sup>th</sup> Annual Presentation at BiTS
- Data was Graciously Provided by Fleck Research in their
  - Report: “Analysis of Test Sockets & Contactors”
  - 2013 Report → 2012 data
- Much More Info Can be Found in Their Report



## Selected Report Data Summarized & Charted

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3

## 4<sup>th</sup> Annual Report

- The Business side of sockets
  - Financial Data + Trends
  - Contact Utilization
- Beyond this snapshot is more
  - Semiconductor Technology Context
  - Globalization
  - Technology Trends

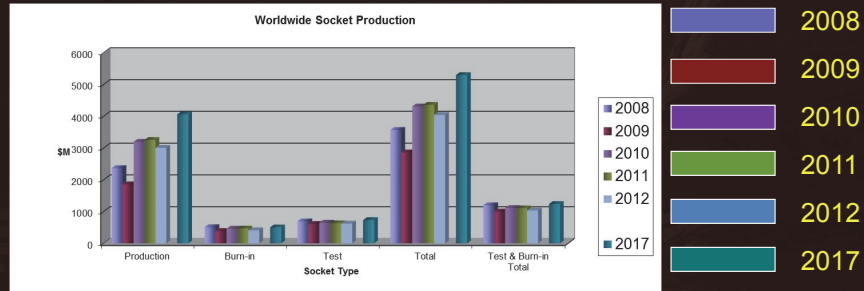
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4

## Sockets Worldwide

- 11 to '12
  - Production **Burn-in** **Test** **Total** **Total Test & Burn-in**
  - 7.6% -11.9% -1.9% -7.3% -6.2%
- 5 Year ('12 to '17) Growth forecast .....19.3%



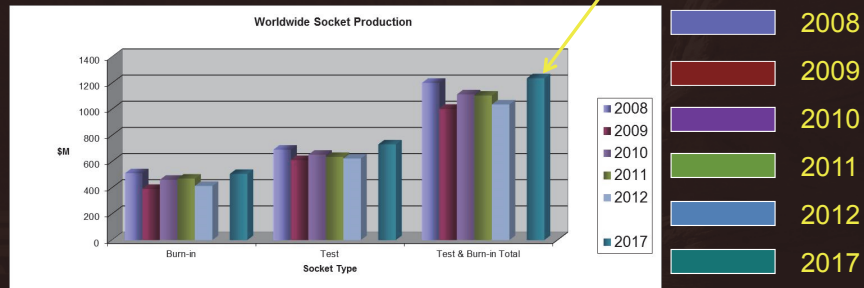
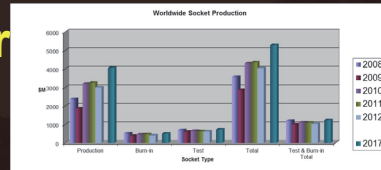
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5

## Sockets Wor

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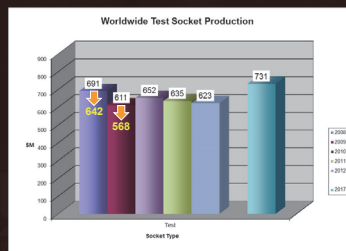
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6

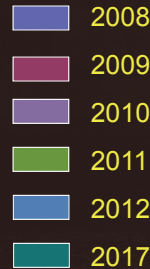


## Test Sockets & Contactors

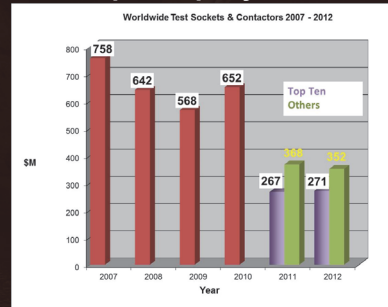
- **Total Market**
  - 2013 report – **Down 2.6% - '10 to '11**
  - **Up 36.4% '11 to '16**
  - 2014 report – **Down 1.9% - '11 to '12**
  - **Up 17.3% '12 to '17**
- **Survey Market (2012)**
  - **Top 10 Companies: \$M271; 43.5% of Total Market...increase in market share vs. 2011**
  - **Top Company: 8.1%**



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7

## Test Sockets & Contactors 2013 Outlook

Geography	\$M	% of Total
North America	141	22.5
Europe	113	18.0
Asia	444	70.8
ROW	24	3.8
Double Counting	95	-15.1
<b>TOTAL</b>	<b>627</b>	<b>100</b>

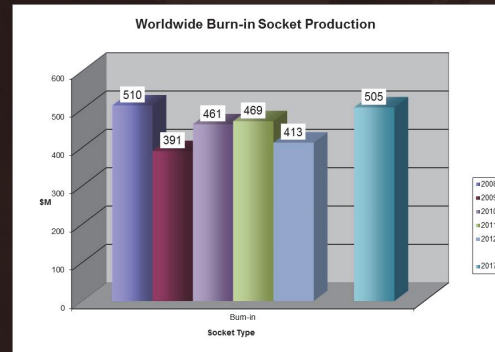
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8

## Burn-in Sockets

- **Total Market**
- 2013 – Up 1.7% - '10 to '11  
report – Up 45.6% '11 to '16
- 2014 – Down 11.9% - '11 to '12  
report – Up 22.3% '12 to '17



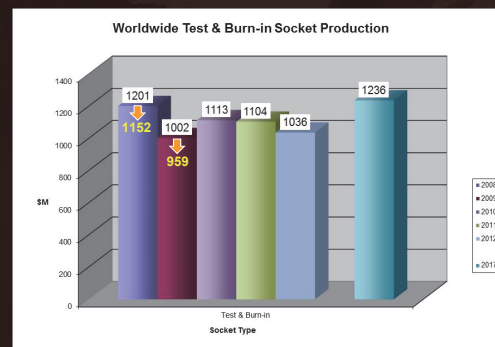
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9

## Test & Burn-in Sockets

- **Total Market**
- 2013 – Down .8% - '10 to '11  
report – Up 40.3% '11 to '16
- 2014 – Down 6.2% - '11 to '12  
report – Up 19.3% '12 to '17



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10



## Contact Utilization Test Sockets & Contactors

Contact Type	\$M		% of Total	Y-Y Growth
	2011	2012	2012	
Spring Pin	544.3	593.0	76.3	8.9%
Proprietary	165.7	184.0	23.7	11.0%
Total	710.0	777.0	100	9.4%

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11

## Wrap-Up

- An Additional View of the Socket Market
- Market Research Data: A Snapshot of the Business Side of Sockets
- Market Slowed in 2012, yet Significant 5 Year Growth is Projected
  - Test Sockets: ~Flat Projected 2012 to 2013
- Solid Y-Y Growth in Contact Utilization

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12