(12) **United States Patent**
Johnson et al.

(10) **Patent No.: US 7,338,292 B2**
(45) **Date of Patent: Mar. 4, 2008**

(54) **BOARD-TO-BOARD ELECTRONIC INTERFACE USING HEMI-ELLIPSOIDAL SURFACE FEATURES**

(75) Inventors: **Kenneth W Johnson**, Colorado Springs, CO (US); **Brock J. LaMeres**, Colorado Springs, CO (US)

(73) Assignee: **Agilent Technologies, Inc.**, Santa Clara, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **11/340,067**

(22) Filed: **Jan. 26, 2006**

(65) **Prior Publication Data**

US 2007/0173080 A1 Jul. 26, 2007

(51) **Int. Cl.**
H01R 12/00 (2006.01)
H05K 1/00 (2006.01)

(52) **U.S. Cl.** **439/66**

(58) **Field of Classification Search** 439/66, 439/65, 67, 69, 73, 62, 325, 326, 595
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,967,262	A *	10/1990	Farnsworth	257/678
4,975,763	A *	12/1990	Baudouin et al.	257/696
5,122,064	A *	6/1992	Zarreii	439/65
5,432,678	A *	7/1995	Russell et al.	361/760
5,895,281	A *	4/1999	Rothenberger	439/326
6,447,321	B1 *	9/2002	Perino et al.	439/326
6,705,877	B1 *	3/2004	Li et al.	439/74
6,780,028	B1 *	8/2004	Kennedy et al.	439/83
6,846,194	B2 *	1/2005	Self et al.	439/329
6,896,552	B2 *	5/2005	Kosmala	439/620.07
7,097,462	B2 *	8/2006	Ichikawa	439/66
2006/0202675	A1 *	9/2006	Parker et al.	324/158.1

* cited by examiner

Primary Examiner—Chandrika Prasad

(57) **ABSTRACT**

A board-to-board interconnect is presented. The interconnect is fashioned from solder beads or hemi-ellipsoidal surface features on a surface of a printed circuit board and contact pads on a second printed circuit board.

6 Claims, 9 Drawing Sheets