UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANKAN PRAMANICK,
MARK ELSTON, LEON CHEN,
and ROBERT SAUER

Appeal 2007-3008
Application 10/772,327[1]
Technology Center 2800

Decided: May 21, 2008

Before ROBERT E. NAPPI, SCOTT R. BOALICK, and MARC S. HOFF, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a Final Rejection of claims 1-24. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

Appellants' invention relates to automated test equipment for testing one or more ICs, including a hardware and software framework having

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[1] Application filed February 6, 2004. The real party in interest is Advantest Corporation.

standard interfaces with which modules from different vendors may interact in a plug-and-play manner (Spec. 1, 3). The system includes at least one site controller for controlling at least one test module to apply at least one test to at least one device under test (DUT) (Spec. 5). A system controller controls the at least one site controller (*Id.*).

Claim 1 is exemplary:

1. A distributed operating system for a semiconductor test system for testing at least one device under test (DUT), the operating system comprising:

a host operating system for enabling control of at least one site controller by a system controller, wherein the at least one site controller does not share a common clock; and

at least one local operating system associated with each site controller for enabling control of at least one test module by an associated site controller,

wherein the associated site controller controls at least one test module interactively with the associated site controller in a plug-and-play manner, and

wherein at least one test module performs testing on a corresponding DUT.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Arkin	US 6,028,439	Feb. 22, 2000
Adler	US 2002/0183955 A1	Dec. 5, 2002
Hejlsberg	US 2003/0167277 A1	Sep. 4, 2003
Shah	US 6,782,336 B2	Aug. 24, 2004

Claims 1-5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Arkin.

Claims 6-8 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arkin in view of Adler.

Claims 9-14 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arkin in view of Adler and Hejlsberg.

Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Arkin in view of Adler, Hejlsberg, and Shah.

Claims 15-18 and 21-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arkin.[2]

Appellants contend that Arkin does not teach a site controller controlled by a system controller (App. Br. 4); that the site controller, if any, cannot control the test module in a plug-and-play manner (App. Br. 5-6); and that the parallel bus cited by the Examiner cannot perform the function of "site controller" ascribed to it by the Examiner (Reply Br. 4).

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Appeal Brief (filed September 25, 2006), the Examiner's Answer (mailed January 31, 2007), and the Reply Brief (filed February 28, 2007) for their respective details.

ISSUE

The principal issue in the appeal before us is whether the Examiner erred in holding that Arkin teaches a system controller operative to control

[2] There is no specific statement of rejection for claims 15-18 and 21-23. These claims, however, are discussed within the body of the Examiner's rejections under § 103, and Appellants list this as one of the grounds of rejection.

site controller, which in turn is operative to control a test module in a plug-and-play manner, which in turn is operative to perform testing on a device under test (DUT).

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, they have invented a hardware and software framework for automated test equipment having standard interfaces with which modules from different vendors may interact in a plug-and-play manner (Spec. 1, 3).

2. The system includes at least one site controller for controlling at least one test module to apply at least one test to at least one device under test (DUT) (Spec. 5). A system controller controls the at least one site controller (*Id.*).

Arkin

3. Arkin teaches an integrated circuit tester including a host computer and a set of tester modules for carrying out a sequence of tests on an integrated circuit device under test (DUT).

4. Figure 2 of Arkin illustrates tester module 14(1) of Figure 1 in more detailed block diagram form (col. 7, ll. 31-32). Microcontroller 30 and parallel bus 38A are shown in Figure 2, and thus are part of a tester module (see col. 7, ll. 36-38).

Adler

5. Adler teaches a test device for dynamic memory modules having an electronic test unit for generating test signals for the memory modules (para. [0001]).

Shah

6. Shah relates to a technique improving the testing of an application specific integrated circuit (ASIC) using a more efficient method of managing an idle bus (col. 1, ll. 8-11).

Hejlsberg

7. Hejlsberg teaches an application program interface providing a set of functions for application developers who build Web applications on a network platform (para. [0010]).

PRINCIPLES OF LAW

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (*citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Only if this initial burden is met does the burden of

coming forward with evidence or argument shift to the Appellant. *Piasecki*, 745 F.2d at 1472. Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the Examiner's conclusion.

ANALYSIS

Claims 1-5

The Examiner asserts that Arkin teaches all the limitations of claim 1, in that (1) microcontroller 30 meets the "system controller," (2) parallel bus 38A meets the "site controller," (3) tester module 14(1) meets the "test module," and (4) device under test 12 meets the claimed DUT (Ans. 8).

We disagree with three aspects of the Examiner's interpretation of the Arkin reference.

First, the Examiner states that "[t]he Arkin reference discloses the site controller of claim 1, as shown in Figure 2, the conventional parallel computer bus (38A)" (Ans. 8). The Examiner offers no further explanation why a conventional parallel bus equates to a controller as known to one of ordinary skill in the art. We agree with Appellants' position that "**[s]uch hardware lines have no intelligence and thus they are incapable of controlling other electronic components**. On the contrary, the computer bus (38A) needs to be controlled by other electronic components" (Reply Br. 4). Because the parallel bus cited by the Examiner is not capable of controlling other components, we find that it does not meet the "site controller" limitation of claim 1.

Second, the Examiner refers to Arkin's microcontroller 30 (Fig. 2) as meeting the claimed "system controller," the aforementioned parallel bus 38A (Fig. 2) as meeting the claimed "site controller," and tester module 14(1) (Figs. 1, 2) as meeting the claimed "test module." Claim 1 requires that the system controller control the site controller, which in turn controls the test module. In Arkin, however, "Fig. 2 illustrates tester module 14(1) of Fig. 1 in more detailed block diagram form" (FF 4). In other words, microcontroller 30 and parallel bus 38A, depicted in Figure 2, are internal to the tester module (*Id.*). We agree with Appellants' argument that the "**person skilled in the art would understand that the system controller and/or the site controller are not part of the test module, because the system controller and/or the site controller would be required to interface with different test modules provided by different vendors**" (Reply Br. 5). Further, because the components asserted by the Examiner to equate to the system controller and site controller are *within* the component asserted to equate to the test module, the Examiner has failed to make out a prima facie case of anticipation: the Examiner has not identified any discrete component corresponding to the system controller or site controller, nor has he identified elements that control other elements in the manner required by the claim.

Third, the Examiner states that "Arkin uses the method of plug-and-test; where one DUT is tested with a corresponding test module, upon the test completion another DUT is test [sic]. Therefore taking the broadest reasonable interpretation of the claim Arkin does teach a one test module interactively with the associated site controller in a plug-and-play manner" (Ans. 11). Claim 1, however, requires that "the associated site controller

controls at least one test module interactively with the associated site controller in a plug-and-play manner." The Examiner has failed to explain how a serial process of testing one DUT, then another, etc., equates to a *site controller* controlling a *test module* in a plug-and-play manner. We agree with Appellants that DUTs are not equivalent to test modules (Reply Br. 6), and that Arkin does not teach that the test module can be attached/detached from the site controller in the way that a "plug-and-play manner" would suggest (App. Br. 6).

We therefore find that Arkin does not teach every limitation of claim 1. We find error in the Examiner's rejection of claims 1-5 under 35 U.S.C. § 102.

Claims 6-24

Each of these claims, rejected under 35 U.S.C. § 103, depends from independent claim 1. We have reviewed the Adler, Hejlsberg, and Shah references, each applied against one or more of these claims, and find that they do not supply the teachings we have noted *supra* to be missing from Arkin. We therefore find error in the Examiner's rejection of claims 6-24 under 35 U.S.C. § 103.

CONCLUSION OF LAW

We conclude that Appellants have shown that the Examiner erred in rejecting claims 1-24. On the record before us, claims 1-24 have not been shown to be unpatentable.

DECISION

The Examiner's rejection of claims 1-24 is reversed.

REVERSED

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