United States District Court,
N.D. Illinois, Eastern Division.

MIDTRONICS, INC., et al,
Plaintiffs.
v.
AURORA PERFORMANCE PRODUCTS LLC, etc., et al,
Defendants.

July 11, 2008.

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MEMORANDUM OPINION AND ORDER

MILTON I. SHADUR**, Senior District Judge.**

Midtronics, Inc. ("Midtronics") claims that Aurora Performance Products LLC d/b/a Argus Analyzers ("Argus") and BPPower, Inc. ("BPPower") have infringed its United States Patent 5,821,756 (the "'756 Patent"), entitled Electronic Battery Tester with Tailored Compensation for Low State-Of Charge. FN1 Having reached an impasse as to the meaning of certain of the claim terms, the parties now look to this Court for aid in claim construction. FN2 This opinion conducts a *Markman* analysis to construe language contained in various claims of the ' 756 Patent.

FN1. Citations to the '756 Patent will utilize a colon, with the number preceding the colon denoting the column and the number after the colon denoting the line.

FN2. Midtronics has filed an initial ("M.Mem.") and a responsive ("M.R.Mem.") memorandum, while Argus and BPPower have jointly filed corresponding memoranda ("A-B Mem." and "A-B R. Mem.").

Tenets of Claim Construction

In an action claiming patent infringement, the court must resolve any disputed issues of claim construction before moving to the infringement claim (Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1370 (Fed.Cir.2003)). Construction of a patent claim presents a question of law through which the court

determines the scope and meaning of the claim (Markman v. Westview Instruments, Inc., 517 U.S. 370, 372, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996)).

To that end claim terms should be given their ordinary and customary meaning as understood by a person of ordinary skill in the art as of the effective filing date of the patent application (Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed.Cir.2005) (en banc)). Claim language is the most important indicator of the meaning of the claim and should therefore be the central focus of the analysis (Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1387 (Fed.Cir.2002); Phillips, 415 F.3d at 1312). Beyond the claim language, a construing court should look primarily to other intrinsic evidence: other claims within the same patent, the patent's specification and the prosecution history (Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 955 (Fed.Cir.2000)). But as helpful as a patent's specification may be in claim construction (Phillips, 415 F.3d at 1315), a court must be mindful to avoid importing limitations from the specification into the claims (id. at 1323).

If ambiguity lingers after the application of intrinsic evidence, a construing court may then turn to extrinsic evidence to supplement its interpretive efforts (Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583-84 (Fed.Cir.1996)). For example, judges may consult and rely on dictionary definitions, although extrinsic in nature, so long as the definitions do not contradict claim terms (id. at 1584 n. 6). But when the patentee dons a lexicographer's cap and crafts special definitions, those specially defined meanings trump ordinary usage-and so dictionary definitions are not then a proper resource (id. at 1582; Phillips, 415 F.3d at 1316).

Patent Subject Matter

Midtronics's patent claims an improvement on previous battery testers ('756 Patent abstract). Dr. Keith Champlin ("Champlin"), one of the three co-inventors of the '756 Patent, has amassed numerous patents relating to battery testers since the 1970s (M. Mem. 2; A-B Mem. 3), essentially creating an alternative to previous battery testers that had employed "discharge testing" (M. Mem. 3; A-B Mem. 2).

Discharge testing (also known as load testing) subjects the battery to a direct current load having a predetermined value for a prescribed period of time (M. Mem. 3; A-B Mem. 2). That process has several disadvantages. Among those, it causes the battery to lose considerable energy immediately after the test and is not repeatable because it creates changes in the battery's chemistry (M.Mem.3-4).

Champlin invented "dynamic testing" in the 1970s by measuring what he calls the dynamic conductance of the battery (M.Mem.4-5). Dynamic testing (which utilizes a low energy small signal) is repeatable and does not alter the battery under test (M.Mem.5-6). Because not all battery types are designed in the same way,FN3 the accuracy of the test can be compromised unless the type of battery being tested is taken into account (M.Mem.7). In that respect the ' 756 Patent claims an improvement over previous dynamic testers by adjusting for different battery types to create more accurate test results (M.Mem.7).

FN3. For instance, automotive batteries differ depending on whether they are designed for hot or cold climates (M.Mem.6).

Disputed Claim Terms

Midtronics offers four claim terms for construction: (1) dynamic battery parameter, (2) dynamic resistance, (3) dynamic conductance and (4) intermediate dynamic parameter (M.Mem.1). Argus and BPPower state

that the only claim term in need of construction is "dynamic," and they offer "measured using an alternating current signal" as their proposed meaning (A-B Mem. 1).

At the outset it is helpful to review some basic electrical terms. "Current" is the movement of an electric charge through an electrical element (think of a charge moving through a copper wire) (M.R. Mem. 3 n. 2). "Conductance" is the measure (in "mhos") of the ability of a circuit to conduct electricity (McGraw-Hill Dictionary of Scientific and Technical Terms [hereafter simply "Scientific Dictionary"] 434 (5th ed.1994)). "Resistance" is the measure (in "ohms") of the opposition of a circuit to the flow of electrical current (as such, it is the inverse of resistance FN4) (McGraw-Hill Encyclopedia of Physics 328 (2d ed.1993)). "Polarity" is the direction of the current and is either positive or negative (M.R. Mem. 3 n. 2). Two types of electrical currents are alternating and direct currents ("AC" and "DC").

FN4. Conductance can be expressed mathematically as 1 divided by resistance, and resistance can be expressed as 1 divided by conductance (M.Mem.12-14).

Dynamic Battery Parameter

"Dynamic battery parameter" (used in Claims 1, 5, and 7) can be easily construed: It is defined in the specification as "intended to refer to either the dynamic conductance or the dynamic resistance of a battery" ('756 Patent 17:62-64; M. Mem. 11-12; A-B Mem. 6). And of course patentees are free to act as their own lexicographers and to create or define terms as they please (Vitronics, 90 F.3d at 1582). Although the quoted definition does not provide an ultimate answer to the meaning of "dynamic," it is a start.

Dynamic Resistance and Dynamic Conductance

"Resistance" and "conductance" (already briefly described) are well-defined terms in the art. Resistance is the voltage across an electrical element divided by the current passing through the element (Scientific Dictionary 1693). Conductance is the inverse: the current passing through an electrical element divided by the voltage across the element (*id*. at 434). What must be determined is the effect that "dynamic" has on those terms in the context of the '756 Patent.

Both parties characterize dynamic as "time-varying" (M.R. Mem. 6-7, 13; A-B Mem. 11), but Argus and BPPower proceed one step further and draw the conclusion that a time-varying current must be AC (A-B Mem. 11; 14). They offer this definition of AC (Authoritative Dictionary of IEEE Standard Terms 28 (7th ed.2000)):

(1) An electric current that reverses direction at regularly recurring intervals of time. *Contrast:* direct current.

(2) A periodic current with an average value over a period of time of zero. FN5

FN5. To satisfy that second standard-calling for an average value of zero-current must alternate between identical positive and negative charges (+30 and -30 for example) at a regular interval. Each time the charge switches from positive to negative (changes polarity), the current reverses direction. By contrast, DC is a unidirectional current in which the changes in value (polarity) are either zero or so small that they may be neglected (Authoritative Dictionary of IEEE Standard Terms 312 (7th ed.2000)).

As thus defined, an AC must change polarity (also known as reversing direction), alternating between positive and negative charges. That requires a time-varying (non-static) current. But not all time-varying currents will satisfy the AC definition. For instance, if a current alternated regularly between a zero charge and a positive value, the current would be time-varying but not AC (because it would never change polarity and reverse direction) (M.R. Mem. 5 Fig. 4).

Argus and BPPower point to extrinsic evidence in which Midtronics representatives-either Champlin or Midtronics' opinion witness or its attorneys-refer to time-varying aspects of the '756 Patent in deposition testimony or memoranda filed in other cases. But such references, even if appropriate for consideration, do not support the conclusion that "dynamic" as used in the '756 Patent means AC. Instead they are entirely consistent with Midtronics' submissions as to the '756 Patent and its claims language, asserting that "dynamic" means time-varying but that time-varying does not necessarily mean AC.FN6

FN6. M.R. Mem. 9-11 correctly (and persuasively) argue that the Argus-BPPower contention that would limit "dynamic" to an AC current would impermissibly exclude Midtronics' preferred embodiment. That "is powerful evidence that the [Argus-BPPower] construction is incorrect" (Nellcor Puritan Bennett, Inc. v. Masimo Corp., 402 F.3d 1364, 1368 (Fed.Cir.2003) (adapted to this case), adhering to the principle announced in Vitronics, 90 F.3d at 1583).

Such a reading of "dynamic" sustains Midtronics' proposed constructions of "dynamic resistance" and "dynamic conductance." Adding "dynamic" to the well-known terms "resistance" and "conductance" incorporates the notion of measuring changes in value over time. This Court adopts Midtronics' position that "dynamic resistance" is "the change in voltage through an element divided by the change in current across the element" and "dynamic conductance" is "the change in current through an element divided by the change in voltage across the element."

Intermediate Dynamic Parameter

"Intermediate dynamic parameter," the last term to be construed, does not appear in the '756 Patent specification, but its meaning can be discerned from its use in the claims. Claim 1 teaches a device containing circuitry that determines an intermediate dynamic parameter of the battery being tested ('756 Patent 18:12-14). Correction circuitry then adjusts that figure, depending on the battery type, to arrive at the adjusted intermediate parameter ('756 Patent 18:17-27).

Intermediate dynamic parameter can best be thought of as the base test result that is returned before it is adjusted to account for differences in battery type. That reading is consistent with the term's usage across the claims (Claims 1, 2, 3, 5, 7, 9 and 11). This Court therefore construes "intermediate dynamic parameter" in conformity with Midtronics' proposed construction: "unadjusted or uncorrected dynamic battery parameter."

Conclusion

This opinion has construed the disputed claim terms of the '756 Patent (all in favor of Midtronics's more persuasive arguments). Nothing said here of course expresses a view as to patent validity or infringement,FN7 but it is now possible to move forward on those fronts. This action is set for a telephonic status hearing at 1 p.m. July 16, 2008.

FN7. In that respect, the Argus-BPPower opening gun engages in a needless-indeed inappropriate-discussion of the merits as between their "Accused Products" and the '756 Patent.

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