

United States District Court,  
S.D. New York.

**P3 INTERNATIONAL CORP. and Daniel Liu,**  
Plaintiffs.

v.

**UNIQUE PRODUCTS MANUFACTURING LTD., Mandolyn International Ltd., UPM Technology (Asia) Ltd., UPM Global Ltd., all d/b/a the UPM Group, UPM Marketing, Inc., UPM Technology (USA), Inc., and Smartlabs, Inc., d/b/a Smarthome,**  
Defendants.

No. 08 Civ. 5086(DLC)

**May 21, 2009.**

James A. Power Jr., Marguerite Del Valle, Power Del Valle LLP, New York, NY, for Plaintiffs.

John James McGlew, McGlew and Tuttle, P.C., Scarborough, NY, for Defendants.

### ***OPINION & ORDER***

**DENISE COTE, District Judge.**

Plaintiffs P3 International Corporation and Daniel Liu (collectively, "P3") bring this action against defendants Unique Products Manufacturing Ltd., Mandolyn International Ltd., UPM Technology (Asia) Ltd., UPM Global Ltd., all doing business as the UPM Group; UPM Marketing, Inc.; UPM Technology (USA) Inc. (collectively, "UPM"); and Smartlabs, Inc., doing business as Smarthome ("Smartlabs"). P3 alleges that defendants have infringed on its United States Patent No. 6,095,850 (the "'850 Patent"), which covers an electrical energy meter. FN1

FN1. On December 1, 2008, P3 and Smartlabs signed a stipulation enjoining Smartlabs from, *inter alia*, selling in the United States the product that P3 alleges infringed on its patent *pendite lite* and severing the issue of Smartlab's alleged infringement from the case. The stipulation further provided that if any of claims 1, 4, 5, 6, 7, 10, or 11 of P3's patent have not been adjudged to be invalid or unenforceable at the end of this action, then Smartlabs will be permanently enjoined from, *inter alia*, selling the product during the term of P3's patent.

Pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), the parties have submitted briefing regarding their proposed constructions of the '850 Patent's claims. The following sets forth the Court's construction of disputed terms, including a rejection of UPM's contention that several claim terms are governed by 35 U.S.C. s. 112, para. 6 and constitute meansplus-function limitations.

## BACKGROUND

The parties dispute the construction of the following terms used in the '850 Patent: control circuit (in Claim 1), current detecting circuit (in Claim 7), voltage detecting circuit (in Claim 11), electrical parameters, analog-to-digital converter ("ADC"), voltage amplifier, and central processing unit ("CPU").

Claim 1 of the '850 Patent describes (emphasis supplied):

An electrical adapter configured to be connected between an electric socket and an electric appliance, for indicating a plurality of electrical parameters of the electric appliance, said electric adapter comprising:

a housing;

a plug arranged on a rear of the housing for insertion into an electric socket; an outlet socket formed on the housing, whereby the electric appliance can be electrically connected to the outlet socket;

*a control circuit including a central processing unit located within the housing for detecting a plurality of electrical parameters of the electric appliance during operation [;] a display unit arranged on the housing for displaying at least one of the plurality of electrical parameters detected by the control circuit; and,*

a mode selection switch arranged on the housing and connected to the central processing unit, the mode selection switch being operable from externally [ sic ] of the housing to select which of the plurality of electrical parameters is displayed by the display unit.

Claim 2 sets forth the electric adapter as claimed in Claim 1, "wherein the plurality of electrical parameters indicated on the display unit comprises present time, voltage value, current value, watt, kilowatt-hour, apparent power value, and power factor."

Claim 4 describes the electric adapter as claimed in Claim 1, wherein the control circuit comprises (emphasis supplied):

*a voltage detecting circuit* for detecting a voltage supplied to the electric appliance and generating a voltage value;

*a current detecting circuit* for detecting a current supplied to the electric appliance and generating a current value; and

a time base signal generator for providing a time base signal; whereby the central processing unit receives the voltage value generated by the voltage detecting circuit, the current value generated by the current detecting unit, and time base signal to calculate the plurality of electric parameters.

Claim 7 claims an electric adapter comprising, *inter alia*, (emphasis supplied):

*a control circuit* arranged in the housing for detecting the plurality of electrical parameters of the electric appliance during operations; and

a display unit arranged on the housing for displaying at least one of the plurality of electrical parameters

received and processed by the control circuit, wherein the control circuit comprises:

*a voltage detecting circuit for detecting a voltage supplied to the electric appliance and generating a voltage value;*

*a current detecting circuit for detecting a current supplied to the electric appliance and generating a current value;*

a time base signal generator for providing a time base signal; and

a central processing unit receiving the voltage value generated by the voltage detecting circuit, the current value generated by the current detecting circuit, and the time base signal for calculating the plurality of electrical parameters, wherein *the voltage detecting circuit comprises;*

*a voltage amplifier electrically connected to the output outlet of the adapter in parallel connection for generating an analog voltage signal;*

*a voltage zero-crossing detecting circuit for detecting a zero-crossing signal of the analog voltage signal and then sending the zero-crossing signal to the central processing unit; and*

*an analog-to-digital converter for converting the analog voltage signal generated by the voltage amplifier into a digital voltage value, and then sending the digital voltage value to the central processing unit.*

Claim 11 claims, *inter alia*, an electric adapter with a control circuit that comprises (emphasis supplied):

*a voltage detecting circuit for detecting a voltage supplied to the electric appliance and generating a voltage value;*

a current detecting circuit for detecting a current supplied to the electric appliance and generating a current value;

a time base signal generator for providing a time base signal; and

*a central processing unit receiving the voltage value generated by the voltage detecting circuit, the current value generated by the current detecting circuit, and the time base signal for calculating the plurality of electrical parameters, wherein the current detecting circuit comprises;*

*a current amplifier for detecting a current flow supplied to the electrical appliance, and then generating an analog current signal; and*

*an analog-to-digital converter for converting the analog current signal generated by the current amplifier into a digital current value, and then sending the digital current value to the central processing unit.*

## **DISCUSSION**

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) ( *en banc* )

(citation omitted). In construing a patent claim, which is a question of law, a court "should look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history." *PC Connector Solutions LLC v. SmartDisk Corp.*, 406 F.3d 1359, 1362 (Fed.Cir.2005) (citation omitted). A court may consider extrinsic evidence, such as expert and inventor testimony, dictionaries, and treatises, but such extrinsic evidence is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (citation omitted); *see also* *id.* at 1322-23 ("Judges are free to consult dictionaries and technical treatises ... when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." (citation omitted)). If the meaning of the claim is clear from the intrinsic evidence alone, resort to extrinsic evidence is improper. *Boss Control, Inc. v. Bombardier Inc.*, 410 F.3d 1372, 1377 (Fed.Cir.2005).

Courts should give the words of a claim "their ordinary and customary meaning," *Phillips*, 415 F.3d at 1312 (citation omitted), which is defined as "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Id.* at 1313. "A patentee, however, can act as his own lexicographer to specifically define terms of a claim contrary to their ordinary meaning." *Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc.*, 467 F.3d 1370, 1376 (Fed.Cir.2006) (citation omitted). In addition, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (citation omitted); *see also* *Kinetic Concepts, Inc. v. Blue Sky Med. Group, Inc.*, 554 F.3d 1010, 1018-19 (Fed.Cir.2009). Although courts use the specification "to interpret the meaning of a claim," at the same time courts must "avoid the danger of reading limitations from the specification into the claim" itself. *Phillips*, 415 F.3d at 1323.

### ***A. Means-Plus-Function Limitation***

According to 35 U.S.C. s. 112, para. 6,

[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification.

35 U.S.C. s. 112, para. 6; *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1371 (Fed.Cir.2003). "Such limitations are generally known as 'means-plus-function' or 'step-plus-function' limitations," and they allow patent applications "to claim an element of a combination functionally, without reciting structures for performing those functions." *Apex Inc.*, 325 F.3d at 1371. Paragraph 6 of s. 112 was enacted by Congress in response to the Supreme Court's decision in *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946), which had rejected patent claims that "do not describe the invention, but use conveniently functional language at the exact point of novelty," *id.* at 8 (citation omitted)-in order to "expressly allow[ ] so-called 'means' claims, with the proviso that application of the broad literal language of such claims must be limited to only those means that are 'equivalen [t]' to the actual means shown in the patent specification ." *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 27-28 (1997).

Determining whether a term should be regarded as a means-plus-function limitation, "like all claim construction issues, is a question of law for the court ... on which evidence from experts may be relevant." *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed.Cir.2004). "[A] patentee's use of the word 'means' in a claim limitation creates a presumption that 35 U.S.C. s. 112 paragraph 6 applies."

Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1096 (Fed.Cir.2008). Where, however, "a claim element does not use 'means,' there is a rebuttable presumption that s. 112, para. 6 does not apply." TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1373 (Fed.Cir.), *cert. denied*, 129 S.Ct. 629 (2008). This latter presumption "is a strong one that is not readily overcome." Lighting World, Inc., 382 F.3d at 1358. A party can rebut the presumption if it demonstrates by a preponderance of the evidence that "the claim term fails to recite sufficiently definite structure or else recites a function without reciting sufficient structure for performing that function." Apex Inc., 325 F.3d at 1372 (citation omitted); *see also* TIP Systems, LLC, 529 F.3d at 1374 (when deciding whether presumption is rebutted, "the focus is on whether the claim recites sufficiently definite structure").

The Federal Circuit has "consistently held that 'means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function.'" Welker Bearing Co., 550 F.3d at 1095 (quoting Phillips, 415 F.3d at 1311). It has explained that

[i]n considering whether a claim term recites sufficient structure to avoid application of section 112 para. 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.... What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word FN2 or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term "means for."

FN2. A "nonce word" is "[a] word invented, occurring, or used only for a particular occasion." *Webster's II New Riverside University Dictionary*, 798 (1994).

Lighting World, Inc., 382 F.3d at 1359-60 (Fed.Cir.2004) (footnote added). The Federal Circuit has found it appropriate to "look[ ] to the dictionary to determine if a disputed term has achieved recognition as a noun denoting structure, even if the noun is derived from the function performed." *Id.* at 1360; *see also* Massachusetts Institute of Technology and Electronics For Imaging, Inc. v. Abacus Software, 462 F.3d 1344, 1354 n. 5 (Fed.Cir.2006) ( "MIT" ). The fact that more than one structure may be described by a term, or even that the term may encompass "a multitude of structures," does not make a term any less a name for structure. Lighting World, Inc., 382 F.3d at 1361.

The parties dispute whether the term "control circuit" in Claim 1, "current detecting circuit" in Claim 7, and "voltage detecting circuit" in Claim 11 are means-plus-function limitations subject to 35 U.S.C. s. 112, para. 6. The Federal Circuit has considered the issue of whether claims involving the word "circuit" are subject to means-plus-function treatment on several occasions.

In Apex Inc., 325 F.3d 1364, the Federal Circuit first noted that none of the claims at issue used the word "means," so the presumption was that s. 112 para. 6 did not apply. *Id.* at 1373. The court found that it was not necessary in the circumstances presented for it to hold that the term "circuit" by itself always connoted sufficient structure to those skilled in the art such that s. 112 para. 6 did not apply, but it noted that several courts had so found. *Id.* at 1373 & n. 1.

In addition, the Apex court cited to the Dictionary of Computing definition of "circuit" as " 'the combination of a number of electrical devices and conductors that, when interconnected to form a conducting path, fulfill

some desired function.' " *Id.* at 1373 (quoting Dictionary of Computing, 75 (4th ed.1996)). The court found that "[i]n light of this definition, it is clear that the term 'circuit,' by itself connotes some structure," and "in the absence of any more compelling evidence of the understanding of one of ordinary skill in the art, the presumption that s. 112, para. 6 does not apply is determinative." *Id.*

The *Apex* court found the defendant's proffered evidence, consisting mainly of the specification and district court cases addressing the term " 'circuit means,' " insufficient to rebut the presumption. *Id.* The specification disclosed the preferred embodiment and did not use the term "in a manner clearly inconsistent with the ordinary meaning as understood by one of ordinary skill in the art," *id.* (citation omitted), and the defendant's expert witness "show[ed] only that the term 'circuit' is understood by one of ordinary skill in the art as a very broad term and that one of the accused products included several of the circuit elements." *Id.* at 1374.

Finally, the *Apex* court noted that the term "circuit" paired with an adjectival modifier such as "interface," "programming," or "logic," "certainly identifies some structural meaning to one of ordinary skill in the art." *Id.* at 1373. The court found that it was error for a district court to rely on the single word "circuit" in the limitations; rather, the court should have looked at the limitation as whole, "e.g., a first interface circuit for receiving keyboard and cursor control device signals from the workstation." *Id.* at 1372 (citation omitted).

In *Linear Technology Corp. v. Impala Linear Corp.*, 379 F.3d 1311 (Fed.Cir.2004) ( "*Linear*" ), the Federal Circuit again considered the term "circuit" in a case where the presumption was that the means-plus-function treatment of s. 112 para. 6 did not apply. The specific claim terms at issue were "*a first circuit* for monitoring a signal from the output terminal ...," "*a second circuit* for generating a first control signal during a first state of circuit operation ...," and "*a third circuit* for generating a second control signal during a second state of circuit operation ...." *Id.* at 1319. The court found that "[t]echnical dictionaries, which are evidence of the understandings of persons of skill in the technical arts, plainly indicate that the term 'circuit' connotes structure." *Id.* at 1320. The court further held that "when the structure-connoting term 'circuit' is coupled with a description of the circuit's operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and s. 112 para. 6 presumptively will not apply." *Id.* The court found that the claims in this case were "accompanied by ... language reciting their respective objectives or operations" such "[t]hat persons of ordinary skill in the art would understand the structural arrangements of circuit components from the term 'circuit' coupled with the qualifying language ...." *Id.* (relying in part on expert testimony for understanding of persons of ordinary skill in the art). Thus, the "circuit" limitations in the claims were not means-plus-function limitations subject to s. 112 para. 6. *Id.* at 1321.

Finally, in *MIT*, 462 F.3d 1344, the Federal Circuit considered whether the terms "colorant selection mechanism" and "aesthetic correction circuitry" were means-plus-function limitations, both of which were presumptively not subject to s. 112 para. 6 because they did not used the word "means." The court found that the presumption was overcome for the term "colorant selection mechanism." *Id.* at 1354. It noted that the "generic terms 'mechanism,' 'means,' 'element,' and 'device,' typically do not connote sufficiently definite structure," and that "mechanism" was used in this case as a synonym for "means." *Id.*

As for the term "aesthetic correction circuitry," however, the court found that it "connotes sufficient structure to avoid 112 para. 6 treatment." *Id.* at 1355. This was because, "[i]n contrast to the term 'mechanism,' dictionary definitions establish that the term 'circuitry,' by itself, connotes structure." *Id.* (citing various dictionary definitions of the word "circuit"). Furthermore, the court noted that in both *Linear* and *Apex* it had found that the "term 'circuit,' combined with a description of the function of the circuit,

connoted sufficient structure to one of ordinary skill in the art to avoid 112 para. 6 treatment." *Id.* Thus, because the claim term in this case described the operation of the circuit, including its input, objective, and output, s. 112 para. 6 did not apply. *Id.* at 1356. The court reaffirmed that the presumption against s. 112 para. 6 treatment in the absence of the word "means" was strong and that "the circumstances must be unusual to overcome the presumption." *Id.* (citation omitted).

UPM contends that the term "control circuit" in Claim 1 is a mean-plus-function limitation, and that therefore according to 35 U.S.C. s. 112 para. 6, it should be construed to cover the corresponding structure described in the specification. As discussed above, in ascertaining whether a particular limitation should get means-plus-function treatment, courts are to look at the limitation as whole, and the limitation in question reads in full: "a control circuit including a central processing unit located within the housing for detecting a plurality of electrical parameters of the electric appliance during operation." The word "means" is not used, so there is a presumption that this term is not a means-plus-function limitation. Thus, it is UPM's burden to demonstrate by a preponderance of the evidence that this claim term fails to recite sufficiently definite structure. UPM has not met this burden.

As the cases discussed above make clear, the term "circuit" alone may connote sufficient structure to one skilled in the art so as to avoid means-plus-function treatment. Claim language that pairs the term "circuit" with an appropriate adjectival modifier or that describes the objective or operation of the circuit further adds structural meaning to one skilled in the art. In this case, the word "control" is used to modify the word "circuit," and the claim language further adds structural meaning to the term by explaining that it is "located within the housing" and its objective is to "detect[ ] a plurality of electrical parameters of the electric appliance during operation." P3's expert has explained, citing the *Modern Dictionary of Electronics* (7th ed.), that a "control circuit" is understood as a circuit that, *inter alia*, carries out instructions in proper sequences and applies the proper commands to the other circuits. In these circumstances, according to the teaching of *Apex*, *Linear*, and *MIT*, UPM has not rebutted the strong presumption that the "control circuit" language in Claim 1 should not be construed as a means-plus-function limitation covering the preferred embodiment in the specification. Rather, "control circuit" in Claim 1 is construed as being a circuit, *i.e.*, " 'the combination of a number of electrical devices and conductors that, when interconnected to form a conducting path, fulfill some desired function,' " *Apex*, 325 F.3d at 1373 (quoting *Dictionary of Computing*, 75 (4th ed.1996)), that includes a central processing unit located within the housing for detecting a plurality of electrical parameters.

The evidence UPM proffers in its attempt to rebut the presumption that "control circuit" should not be given means-plus-function treatment consists mainly of the claim terms themselves, which it argues do not recite sufficiently definite structure, and an expert witness report that states that the term "control circuit" is "not a term of art that provides any information as to the structure ...." This kind of evidence was found insufficient to rebut the presumption in *Apex* that the term "circuit" paired with an adjective such as "interface" or "logic" was not a means-plus-function limitation because such a term "certainly identifies some structural meaning to one of ordinary skill in the art." *Id.*

UPM also cites to *MIT* for the proposition that the term "circuit" does not connote sufficiently definite structure to avoid means-plus-function treatment, but it cites to *MIT*'s discussion of the term "colorant selection mechanism," and not to its discussion of the far more relevant term "aesthetic correction circuitry." *MIT*'s discussion of the latter term explains that term "circuit" does "by itself, connote[ ] structure," *MIT*, 462 F.3d at 1355, and that *Apex* and *Linear* had found that the "term 'circuit,' combined with a description of the function of the circuit, connoted sufficient structure to one of ordinary skill in the art to avoid 112 para.

6 treatment." *Id.*

Likewise, UPM's argument that the disputed term is a means-plus-function limitation because it does not connote one specific structure was rejected in *Lighting World*, 382 F.3d 1354, which explained that the Federal Circuit has "not required the claim term to denote a specific structure," but rather has "held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function." *Id.* at 1359-60. While "control circuit" as set forth in the instant claim language may not connote one specific structure, it is not "simply a nonce word" that "is simply a substitute for the term 'means for.'" *Id.* at 1360.

Finally, UPM's contention that the modifier "control" does not convey sufficiently definite structure to avoid means-plus-function treatment misses the mark. First, UPM has not demonstrated that the word "control" connotes less structure than the words "logic" or "interface" that were at issue in *Apex* and found to connote sufficiently definite structure to one skilled in the art. In *Linear*, the terms "first circuit" and "second circuit" were found to convey sufficient structure because the claim language went on to describe the objective or operation of the circuit in a way that allowed an ordinary person skilled in the art to understand the structural arrangement at issue. Here too, the claim language describes the objective of the "control circuit." While the description of the objective may not be as detailed as in some of the disputed claims at issue in the cases discussed above, it is sufficient to show that the term "control circuit" is not merely used as a synonym for "means," but is a term that conveys structure to one ordinarily skilled in the art. UPM has therefore failed to proffer sufficient evidence to rebut the strong presumption that "control circuit" as described in Claim 1 is not subject to means-plus-function treatment.

UPM also contends that the "current detecting circuit" limitation in Claim 7 and the "voltage detecting circuit" limitation in Claim 11 are also subject to means-plus-function treatment. The full limitations at issue claim "a current detecting circuit for detecting a current supplied to the electric appliance and generating a current value" and "a voltage detecting circuit for detecting a voltage supplied to the electric appliance and generating a voltage value." Neither limitation uses the word "means." Both use adjectival modifiers that further connote structure and describe the objectives of the circuit terms. Thus, for substantially the same reasons that UPM failed to rebut the strong presumption that "control circuit" in Claim 1 was not subject to means-plus-function treatment, it has also failed to rebut the strong presumption that these two claim limitations are not subject to such treatment. "Current detecting circuit" shall be construed as a circuit, as defined above, for detecting a current supplied to the electric appliance and generating a current value, and "voltage detecting circuit" shall be construed as a circuit, as defined above, for detecting a voltage supplied to the electric appliance and generating a voltage value.

## **B. Other Disputed Terms**

### **1. "CPU"**

Claim 1 describes, *inter alia*, "a control circuit including a *central processing unit* located within the housing for detecting a plurality of electrical parameters of the electric appliance during operation." (Emphasis supplied). P3's proposed construction of the term "central processing unit" ("CPU") in its opening brief is "an electronic circuit that executes *software* programs" (emphasis supplied), and in its reply brief its preferred construction is "an electronic circuit that executes *computer* programs." (Emphasis supplied). UPM claims that this construction is inconsistent with the specification because the specification does not mention that the CPU executes software programs. UPM argues that the construction of CPU

should be what the specification describes: that "the CPU receives signals generated by a zero-crossing detecting circuit [ ] and an analog-to-digital converter [ ], and a time base signal generator [ ]. The CPU processes the data and provides an output to the display unit ...."

Considering the intrinsic evidence of record, namely the claims and the specification, UPM has failed to demonstrate how P3's construction of a "CPU" as an electronic circuit that executes computer or software programs is inconsistent with the claim language or specification or is a deviation from how the term is understood by a person of ordinary skill in the art. Simply because the word "software" is not used in the specification does not make the specification inconsistent with P3's proposed construction. UPM's proposed construction is an attempt to import improperly the limitations from the specification into the claims, without any showing that the specification in this case was intended to be coextensive with the claim. Phillips, 415 F.3d at 1323.

Any ambiguity in the usage of the term is clarified by looking at the extrinsic evidence proffered, which also supports P3's construction, as the *Modern Dictionary of Electronics* provides that a CPU is a "primary unit of the computer system that controls interpretation and *execution* of instructions." *Modern Dictionary of Electronics*, 158 (7th ed.1999) (emphasis supplied). The intrinsic evidence shows that the claimed CPU is a circuit that is to execute various programs and instructions. There is nothing in the specification inconsistent with this understanding of the term's ordinary meaning, and thus the term CPU is construed as "an electronic circuit that executes computer programs."

## **2. "Analog-to-Digital Converter"**

P3 contends that the term "analog-to-digital converter" ("ADC") as used throughout the claims should be construed as "any device or combination of devices that convert an analog signal to a digital signal." UPM's contends that this construction is improper, because the term as claimed in the '850 Patent is a separate element from the CPU, and therefore it argues that the construction should reflect that the claim term only covers such devices that are separate elements from the CPU.

As claimed in the '850 Patent, the ADC converts the analog voltage or current signals into a digital value, and then "send[s] the digital ... value to the" CPU. UPM is correct that it appears from the specification that the preferred embodiment uses ADCs that are separate from the CPU. As discussed above, however, while the specification is the best guide to interpreting a disputed term, courts must be careful not to import limitations from the specification into the claim. Here the claim language itself, which states that the ADC sends the converted digital signal to the CPU, also implies that the ADC is separate from the CPU rather than a component within the CPU, and thus the ADC will be construed as a separate element from the CPU.FN3

FN3. Even if the claims are construed to claim a separate ADC element from the CPU, however, a device that combines the ADC element into the CPU *may* still infringe under the doctrine of equivalents. *See, e.g., Dolly, Inc. v. Spalding & Evenflo Companies, Inc.*, 16 F.3d 394, 398 (Fed.Cir.1994) ("Equivalency can ... exist when separate claim limitations are combined into a single component of the accused device.").

## **3. "Voltage Amplifier"**

In P3's opening claim construction submission, it argued that the term "voltage amplifier" as used throughout the '850 Patent should mean "any device or combination of devices that changes the amplitude of

the voltage input." UPM appears to argue in opposition that this term, like the prior art UPM references, does not amplify the voltage signal but only "attenuate[s]" it in order to be processed by the ADC. In reply, therefore, P3 contends that the parties at least agree that a proper construction of "voltage amplifier" includes "devices that attenuate voltage." P3 further contends that the argument of UPM's expert that the specific limitations found in the specification should be read into this claim limitation should be rejected as improper. The parties having agreed that the term "voltage amplifier" includes at least devices that "attenuate" voltage, and UPM having made no argument in its opposition brief for any different definition of the term, the term "voltage amplifier" shall be construed as a device that at least attenuates voltage.

#### **4. "Electrical Parameters" in Claim 1**

On the instant motion, P3 initially argued that the term "electrical parameters" as used in Claim 1 should be construed as meaning the "direct attributes of the current" or the "measurable aspects of the electricity itself." FN4 In opposition, UPM contends that "electrical parameters" should be construed as any two of the following: "present time, voltage value, current value, watt number, kilowatt-hour, apparent power value, [and] power factor ." This list is taken from dependant Claim 2 of the ' 850 Patent, which provides that "the plurality of electrical parameters indicated on the display unit comprises present time, voltage value, current value, watt, kilowatt-hour, apparent power value, and power factor." In reply, P3 first agrees that the list of electrical parameters set forth in Claim 2 is a list of examples of "electrical parameters" as that term is used in Claim 1. P3 also notes that UPM correctly points out that some such electrical parameters are detected by the circuit, such as voltage and current, and that other parameters, such as power, kilowatt hour, and cost are calculated by the CPU based on those detected parameters. By listing cost in its reply submission, P3 shifted from its initial argument that "electrical parameters" are only the direct or measurable attributes of the electricity and do not include cost.

FN4. P3 took this position in response to UPM's invalidity contentions, which had relied on a Japanese patent application that disclosed an energy meter that displayed only costs.

P3's argument in reply describes as well another part of Claim 1-the "display unit." P3 points out that the display unit in Claim 1 must display at least one of the plurality of electrical parameters that is "detected by the control circuit." P3 thus argues that the list of electrical parameters in Claim 2, some of which are detected by the control circuit and some of which are calculated based on those detected parameters, does not affect the requirement in Claim 1 that the display unit must display at least one of the "plurality of electrical parameters *detected* by the control circuit." (Emphasis supplied.)

To the extent that UPM seeks to construe the term "electrical parameters" in Claim 1 to cover only any two of those parameters listed in Claim 2, it is in error. "In the patent claim context the term 'comprising' is well understood to mean 'including but not limited to.' " *See, e.g. CIAS, Inc. v. Alliance Gaming Corp*, 504 F.3d 1356, 1360-61 (Fed Cir.2007) (noting also that this usage of the term "comprising" embraces the term "comprises" as well). Thus, the term "electrical parameters" in Claim 1 is not limited to only those specific parameters listed in Claim 2, but could include additional parameters as well. Rather, the intrinsic record evidence demonstrates that the ordinary meaning of "electrical parameters" is the measurable attributes of electricity and the attributes that can be calculated from such attributes and other data.

## **CONCLUSION**

The disputed terms, as set forth in the parties' claim construction submissions of March 13, March 27, and

April 10, 2009, are construed as set forth above.FN5

FN5. P3 also represents in its opening brief on the instant motion that UPM contended that the word "receiving" in Claim 7-which provides in pertinent part for "a central processing unit receiving the voltage value generated by the voltage detecting circuit, the current value generated by the current detecting circuit"-means that the CPU must directly receive the signals mentioned from their generating sources. The intrinsic evidence of record, particularly the language of the claims and specification, evidence no intent to limit the word "receiving" to mean the CPU must receive the signals directly from their generating sources. Furthermore, defendants have not addressed this issue in their opposition submission. As such, to the extent this term is still in dispute between the parties, the term "receiving" as used as described above in Claim 7 is construed to cover the CPU's receipt of voltage and current values directly and indirectly from their generating sources within the adapter.

SO ORDERED:

S.D.N.Y.,2009.

P3 Intern. Corp. v. Unique Products Mfg. Ltd.

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