UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

KONINKLIJKE PHILIPS N.V. AND PHILIPS ELECTRONICS NORTH AMERICA CORPORATION, Plaintiffs/Counterclaim-Defendants, v. ZOLL MEDICAL CORPORATION, Defendant/Counterclaim-Plaintiff.	CIVIL ACTION NO. 10-cv-11041-NMG

PLAINTIFFS' NOTICE OF APPEAL TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Plaintiffs Koninklijke Philips N.V. and Philips Electronics North America Corporation hereby appeal to the United States Court of Appeals for the Federal Circuit from the Final Judgment entered on June 20, 2014 (Dkt. No. 599), which became final on August 13, 2014, upon the Court's denial of post-judgment motions (Dkt. Nos. 691-693), and from any and all orders, rulings, findings, and/or conclusions of the Court adverse to Koninklijke Philips N.V. and Philips Electronics North America Corporation including, without limitation, the Court's denial of post-judgment motions (Dkt. No. 692), the Court's Memorandum and Order on motions under Fed. R. Civ. P. 50(a) and 52(c) (Dkt. No. 598), the Court's denial of summary judgment and accompanying Memorandum and Order (Dkt. Nos. 447 and 465), and the Court's Memorandum and Order on claim construction (Dkt. No. 106).

Dated: August 14, 2014

/s/ J. Michael Jakes

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CERTIFICATE OF SERVICE

I hereby certify that this document filed through the CM/ECF system will be sent electronically to the registered participants as identified on the NEF (NEF) and paper copies will be sent to those indicated as not registered participants on August 14, 2014.

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KONINKLIJKE PHILIPS ELECTRONICS N.V., PHILIPS ELECTRONICS NORTH AMERICA CORPORATION, **Plaintiffs,**	)	
v.	)	**Civil No. 10-11041-NMG**
ZOLL MEDICAL CORPORATION **Defendant,**	)	

MEMORANDUM & ORDER

GORTON, J.

I. Background

A. The Parties

On June 18, 2010, Philips Electronics North America Corporation, a Delaware corporation with its principal place of business in Massachusetts, and its parent company Koninklijke Philips Electronics N.V., a Dutch corporation with its principal place of business in the Netherlands, (collectively, "Philips") filed a patent infringement suit against ZOLL Medical Corporation ("ZOLL"), a Massachusetts corporation with its principal place of business in Massachusetts.

Philips' complaint, in 15 counts, is for infringement of U.S. Patent No. 5,607,454, No. 5,721,482, No. 5,735,879, No. 5,749,905, No. 5,773,961, No. 5,800,460, No. 5,803,927, No. 5,836,978, No. 5,879,374, No. 6,047,212, No. 6,178,357, No.

6,304,783, No. 6,356,785, No. 6,441,582 and No. 6,871,093, which relate to components of automated external defibrillators ("AEDs").[1] Philips seeks a declaration that ZOLL is infringing the patents-in-suit, equitable relief, including an injunction, and monetary damages.

In a related, later-filed case, ZOLL brought suit against Philips for five counts of patent infringement of U.S. Patent No. 5,330,526, No. 5,391,187, No. 5,470,343, No. 5,575,807 and No. RE39,250, which also relate to components of defibrillators and supplemental products, including electrodes and power supplies. ZOLL seeks a declaration that Philips is infringing the ZOLL patents-in-suit, equitable relief, including an injunction, and damages. In August, 2011 the two cases were consolidated.

The parties submitted 35 claims for construction. The Court issued an order requesting that the parties narrow the claims for construction to 16. The Court conducted a Markman hearing on October 25, 2012 at which counsel offered arguments in support of their proposed claim construction of 15 disputed terms. The following is the Court's ruling with respect to those terms.

B. The Technology

1. Philips' '454, '879, '905, and '978 Patents

Six of Philip's patents ('454, '879, '905, '978, '212 and '927) are referred to as the "waveform patents" because they

[1] Hereinafter each patent will be referred to by its last three numbers.

relate to the electrical signal (or "waveform") that shocks the patient.

External defibrillators deliver energy to a patient's heart via electrodes applied to the surface of the patient's torso. Due to physiological differences among patients, the resistance to the flow of electricity through the tissue between the defibrillator electrodes and the patient's heart ("impedance") varies from patient to patient depending on the conductivity of their tissues. The intensity of the shock delivered to the heart by the defibrillator can also vary depending on that impedance. A shock that is effective to treat a low-impedance patient may not be effective to treat a high-impedance patient.

Prior art defibrillators required the operator to shock the patient first with an energy level appropriate for the average patient. If the first shock did not work, the operator could then raise the energy level and keep trying. The '454, '879, '905 and '978 patents overcome that problem by providing an external defibrillator that automatically compensates for the different levels of impedance in individual patients in real time by measuring the patient's impedence and adjusting the discharge accordingly.

2. Philips' '212 Patent

The particular waveform described in the waveform patents above is "biphasic." With a biphasic waveform, the system flips

a switch midway to change from positive voltage to negative. Biphasic waveforms had been used in implanted defibrillators but until this patent there was no circuitry that could generate the biphasic waveform at the higher voltages required by external defibrillators. The '212 patent discloses a circuit that can deliver the biphasic waveform at the higher voltages required by an external defibrillator.

3. Philips' '374 and '460 Patents

The '374 and '460 patents ("the self test patents") cover an external defibrillator that can perform self tests to ensure it is functional and ready to use. Prior art external defibrillators were generally designed for hospitals where equipment is frequently tested and maintained. Portable defibrillators designed for a home or office are much less frequently tested and thus might not be functional when needed. The '374 and '460 patents disclose a defibrillator that conducts automatic self tests, some while switched "on" and others while switched "off." After the test, the defibrillator indicates the result "visually and audibly." The patents also describe a "system monitor" that performs the various functions of the self tests.

4. Philips' '093 Patent

The '093 patent is directed to a defibrillator that includes an indicator (audible, visual or both) that reports whether the

defibrillator is functioning properly. The indicator can be activated automatically or in response to a "user-triggered inquiry."

5. Philips' '785 Patent

The '785 patent is directed to a defibrillator that uses voice and visual prompts to instruct the user on how to perform CPR correctly because the steps of CPR are often forgotten, even by trained professionals. The covered defibrillator also monitors the heart rhythm of the patient to determine whether it is treatable by shock and, if so, prompts the rescuer to deliver CPR and follow the shock protocol.

6. ZOLL's '187 Patent

The '187 patent is directed to a semi-automatic defibrillator which has an alarm. In previous defibrillators the alarm was activated by either the heart rate ("averaged QRS rate") or a shock advisory to indicate to the operator whether the electrocardiogram shows an abnormal heart rhythm of the sort that can be corrected by defibrillation shock. The '187 patent is directed to an alarm based on both of these inputs.

7. ZOLL's '807 Patent

The '807 patent relates to a power supply that provides an "AC disconnect alarm." Because a defibrillator is used in emergency situations it is crucial that it is charged when needed. Thus, as the patent explains, "to ensure[] that a

battery of the defibrillator will not inadvertently be left uncharged" the power supply "produces an alarm when it is not connected to a source of AC power." Because this alarm would be distracting during actual emergencies, the alarm signal is only produced when the defibrillator is switched off.

8. ZOLL's '250 Patent

The '250 patent is related to ZOLL's '526 patent and is directed to an "electrode package." Inside the package is a "conductor" that is

> covered with a water based, conductive adhesive gel that contacts a patient's skin and electrically connects the electrode to the patient.

The package is an "envelope" formed from a sheet of material folded in half that opens like a book. It provides quick and easy access to the electrodes but also protects them when it is closed.

9. ZOLL's '526 Patent

The '526 patent is related to the '250 patent and also concerns defibrillation electrodes. These electrodes are gel-covered discs that are placed on the patient's chest. This patent covers a gel arrangement with an electrical resistance that allows for effective shock treatment while also making it less likely that the patient will be burned.

III. Analysis

A. Principles of Claim Construction

In analyzing a patent infringement action, a Court must 1) determine the meaning and scope of the patent claims asserted to be infringed and 2) compare the properly construed claims to the infringing device. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). The first step, known as claim construction, is an issue of law for the court to decide. Id. at 979. The second step is determined by the finder of fact. Id.

The Court's responsibility in construing claims is to determine the meaning of claim terms as they would be understood by persons of ordinary skill in the relevant art. Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). The meaning of the terms are initially discerned from three sources of intrinsic evidence: 1) the claims themselves, 2) the specification and 3) the prosecution history of the patent. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed. Cir. 1996).

The claims themselves define the scope of the patented invention. See Philips, 415 F.3d at 1312. Claim terms are generally given their "ordinary and customary meaning", which is the meaning that a person skilled in the art would attribute to the claim term. See id. at 1312-13. Even if a particular term

has an ordinary and customary meaning, however, a court may need to examine the patent as a whole to determine if that meaning controls. Id. at 1313 ("[A] person of ordinary skill in the art is deemed to read the claim term ... in the context of the entire patent...."); see also Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (noting that a court cannot construe the ordinary meaning of a term "in a vacuum"). Ultimately, the correct construction will be one that "stays true to the claim language and most naturally aligns with the patent's description of the invention ...." Id. at 1316 (citation omitted).

> The patent specification is
>
> the single best guide to the meaning of a disputed term [because it may reveal] a special definition given to a claim term that differs from the meaning it would otherwise possess [or contain] an intentional disclaimer, or disavowal, of claim scope by the inventor.

Phillips v. AWK Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). The Court should also consult the prosecution history to see how the inventor and PTO understood the patent and to ensure the patentee does not argue in favor of an interpretation it has disclaimed. Id. at 1317.

In the rare event that analysis of the intrinsic evidence does not resolve an ambiguity in a disputed claim term, the Court may turn to extrinsic evidence, such as inventor and expert testimony, treatises and technical writings. Id. at 1314.

Although extrinsic evidence may be helpful in construing claims, the intrinsic evidence is afforded the greatest weight in determining what a person of ordinary skill would have understood a claim to mean. Id. at 1324.

B. Disputed Terms

1. Monitoring/monitoring. . .during (Philips' '454, '879, '905, '978 Patents)

The dispute centers on whether monitoring must occur continuously throughout the discharge step, as ZOLL contends, or only one or more times during the discharge step, as Philips' contends.

ZOLL requests that the Court adopt the ordinary meaning of monitoring, which it asserts, has a notion of "ongoingness." ZOLL argues that because the "discharge step" (construed below) takes place over time, "monitoring" must also occur over a period time and cannot be only a single measurement during the step. ZOLL further asserts that the '454 patent actually distinguishes prior art models because they merely "measured" patient impedance and did not continually monitor impedance in "real time." As a result, ZOLL requests that the Court construe the term as "sampling on a regular or ongoing basis" because this definition is the term's ordinary meaning according to the American Heritage Dictionary.

Philips, however, argues that ZOLL's reliance on a single dictionary definition ignores the intrinsic evidence. As a

result, Philips requests that the Court adopt the construction that the United States District Court for the Western District of Washington selected in construing "monitoring" as "measuring... one or more times." Koninklijke Philips Elec.s NV v. Defibtech LLC, 397 F. Supp. 2d 1257 (W.D. Wash. 2005).

The Difibtech Court noted that "monitoring" and "measuring" are both used in related Philips patents. Generally, using different terms raises an inference that the terms have different meanings, but that inference is not determinative. Desper Prods., Inc. v. QSound Labs, Inc., 157 F.3d 1325, 1337 n. 3 (Fed. Cir. 1998). The Difibtech Court concluded that because "both measuring and monitoring occur during periods of time" in the Philips patents, there is "little reason to assume that one term excludes single measurements and one does not." Defibtech 397 F. Supp. 2d at 1264. As a result, the Court construed "monitoring" during the discharge step to require only a "single measurement." Id.

The Defibtech Court determined that if "monitoring" were construed as covering only a single measurement, it would require reading out preferred embodiments. Reading out preferred embodiments is an approach that is "rarely, if ever, correct." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). Each of the six waveform patents, discloses an invention the preferred embodiment of which has three "aspects."

Depending on the patient's impedance, one of the three aspects requires only a single measurement. As a result, the patent must cover single measurements as well as ongoing monitoring. Accordingly, this Court adopts the construction "measuring . . . one or more times."

2. The discharge step/the discharging step

ZOLL requests that the Court construe "discharge step" to make clear that it is "not a test pulse to measure patient impedance." The Court believes that by requesting the addition of that negative limitation to the claim term, ZOLL is proposing that the Court resolve an infringement question during claim construction. Doing so would contradict the purpose of a Markman hearing because "the role of the district court in construing claims" is not to "read limitations into the claims to obviate factual questions of infringement." Am. Piledriving Equip. v. Geoquip, Inc. 637 F.3d 1324, 1331 (Fed. Cir. 2011). Here, the Court declines to adopt ZOLL's construction. Instead, the Court adopts the plain meaning of the term and construes it to mean "the step of discharging the energy source."

The Court notes, however, that during prosecution the patentee equated "discharge" with "shock" in describing prior art. That suggests that the "discharge step" was not intended to describe every possible delivery of energy from the energy source.

3. Plurality of electronic switches (Philips' '212 Patent)

Philips requests that the Court adopt the same construction of this term as did the Court in Defibtech II, which limited the term to the "five-switch configuration disclosed in the specification." Koninklijke Philips Elect. NV v. Defibtech LLC, C03-1322JLR, 2005 WL 3500783, at *4 (W.D. Wash. Dec. 21, 2005) (Defibtech II). Philips asserts that both the patent examiner and the applicants understood a "plurality of electronic switches" to refer to the five-switch circuit in Figure 11.

In Defibtech II the court held that although the patentee disavowed the prior art five-switch configuration contained in the Swanson patent, the "inventors did not...expressly limit the invention to the five-switch configuration that they disclosed in their patent application." 2005 WL 3500783 at *3. At the Markman hearing in the present case both parties agreed that the statements made during prosecution of the '212 patent do not meet the standard for a "clear and unmistakable" surrender necessary to reject the ordinary meaning. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323-26 (Fed. Cir. 2003). In Defibtech II the Court relied on extrinsic evidence including an expert declaration and inventor testimony to reach the conclusion that "plurality of switches" could only cover the five switch configuration contained in Figure 11. Neither of those pieces of extrinsic evidence are, however, before this Court which

therefore declines to adopt that construction.

In Defibtech II, Philips argued contrary to its current position, noting that to construe the "plurality of electronic switches" to cover only the five switch embodiment is

> contrary to the plain, ordinary definition of the word plurality, which means two or more. 'Plurality' does not mean 'only five' or 'five or more.'

This Court agrees. Because the ordinary meaning of plurality is clear to a jury, the term does not require construction.

4. Prior to any attempted use of the defibrillator (Philips' '374 Patent)

The parties dispute the meaning of "attempted use" and thus disagree over when the self test must occur. The parties do agree that self tests performed while the defibrillator is turned off fall within the scope of the applicable claims. The contested issue is, however, whether "prior to any attempted use" includes self tests that are performed after the defibrillator is turned on but before attempted use to treat a patient. Philips asserts that the self test must be performed before the defibrillator is turned on. Zoll proposes a construction in which the self test can occur at any point after the defibrillator is turned on but before it is used to treat a patient. This Court agrees with the Defibtech Court that

> It makes little difference what the phrase 'prior to any attempted use' means, because the claims in which it appears impose modifications that resolve the parties' disputes.

397 2d. at 1268. As a result, the Court will examine the precise use of the term in each of the Claims in which the term appears.

Claim 41 teaches a "periodic test signal generator." Claim 42 states that the test signal will be generated "periodically." According to the "detailed description of the preferred embodiment" in the '374 Patent these periodic self-tests occur daily, weekly or monthly, even when the defibrillator is turned off. Thus, "by their nature, these tests occur before any use of the defibrillator, including merely turning the device on." Id. 1269. As a result, the Defibtech court construed the term when used in Claims 41 and 42 to mean "prior to any attempted use of the defibrillator, even non-therapeutic uses." Although this Court is persuaded by the same reasoning adopted in Defibtech, it prefers the more easily understood construction "prior to an operator turning on the defibrillator."

In Claim 67 the language requires that the generation of a test signal occur "without human intervention." As a result, that language must also refer to one of the periodic self-tests and the status indication must occur prior to turning on the defibrillator. Thus, the Court adopts the same construction as in Claims 41 and 42 where "prior to any attempted use" means "prior to an operator turning on the defibrillator."

Claims 1 and 67 require a different construction. Claim 1 does not indicate which of the multiple types of self-test in the

'374 Patent is required. Claim 1 does not require all of the tests, instead, it requires only one. As the Defibtech Court described, a defibrillator that was designed to conduct a "run time" test and to monitor the defibrillator "continually" would not reveal its status before it was turned on, even though turning it on is a "use." Id. at 1269. Similarly, a defibrillator that could conduct a manual self-test could not indicate its status prior to such a test, even though this test is itself a "use." Id. Thus, it is clear that Philips' proposed construction "prior to an operator turning on the defibrillator" does not accurately express the meaning of this term.

The Defibtech court found that

> the only "uses" of the defibrillator for which the invention of Claim 1 would *invariably* have means to provide an indication of pre-use status are uses in treating a patient.

In the case of a defibrillator capable of running a randomly selected self-test the device would only be guaranteed to "indicate status before anyone used it to treat a patient, but not necessarily before other uses." Id. It is clear, therefore, that in some instances "prior to any attempted use" means "prior to use to treat a patient." In the case of a defibrillator with means to perform a run-time test, however, the term means "prior to an operator turning on the defibrillator." Therefore, with respect to these Claims, the Court adopts the construction "prior to any attempted

use of the defibrillator to treat a patient, and in some cases prior to an operator turning on the defibrillator."

Claim 44 requires a test signal generated "automatically in response to a predetermined event or condition." This Claim includes at least one kind of self-test but does not include the "periodic" self-tests. This Court agrees with the reasoning in Defibtech that if the test is a "run-time" test the status could not be indicated before the defibrillator was turned on. Id. As a result, the Court applies the same construction as in Claim 1.

5. Test signal (Philips' '374, '460 Patents)

The dispute surrounding the construction of "test signal" also relates to the Defibtech court's prior construction of the term. In that case, the court acknowledged that the patent claims are "inconsistent" in the use of the term "test signal." Id. at 1267. As a result, the court construed most instances of "test signal" to mean "a signal associated with testing," but in some instances found that "additional claim language limits the term to a 'signal that initiates testing'." Id. ZOLL requests that the Court adopt the Defibtech Court's construction while Philips argues that "a signal associated with testing" is the better construction because it is one that "a jury can apply uniformly across the board, yet still

be understood within the context of each claim."

The Defibtech court found that the claims in the '460 and '374 patents fell into three classes. Id. First, in claims that "expressly disclose one or more self-tests performed 'in response' to the test signal or other stimuli", "the test signal is a signal that initiates a test, not one that performs it." Id. Second, in claims where the test signal is generated by the system monitor, the test signal is also one that initiates testing. Id. Finally, in the third category where the test signals are neither used to initiate self-testing nor generated by the system monitor, the "test signal" is simply "a signal associated with testing." Id. Thus, although "signal associated with testing" applies in the third category, the other two categories require the additional limitation of "a signal that initiates testing."

While generally "the same claim term used in the same patent 'carries the same construed meaning'" this rule applies only if the court is not "otherwise compelled." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003). Here, this Court agrees with the ruling in Defibtech that the limitations in several of the claims require the court to reach two different constructions of "test signal." As a result, the Court construes this term

to mean the following:

Construction	Patent	Claims
"A signal that initiates testing"	'374	22, 25-27, 42, 44-45, 51-52, 61-62, 64-65, 67-69, 71-72
"A signal that initiates testing"	'460	1-6
"A signal associated with testing"	'374	1-6, 10, 21, 34-37, 41, 43

6. A heart rate alarm circuit in which the inputs comprise an averaged QRS rate and the shock advisory indication (ZOLL's '187 Patent)

The Summary of the Invention in ZOLL's '187 Patent states that it features "an alarm driven by both a heart rate detector and a fibrillation/tachycardia advisory algorithm." This distinction sets the '187 patent apart from prior art in which alarms were based on only one of those inputs. Philips requests that the word "both" be added to the claim construction to make this distinction clear. The Court finds, however, that the claim language is already clear that both inputs are required and is capable of being understood correctly by the jury. As a result, the Court declines to construe this term.

7. Generate an alarm when the monitoring circuitry determines that the external power connection is not connected to a source of external power and that the medical device to which the power supply may be connected is not turned on/Generating an alarm when the external power connection is not connected to the external power source and the medical device is not

turned on (ZOLL's '807 Patent)

Philips argues that the alarm circuitry is configured to generate an alarm "as a result of" the monitoring circuitry determining that the device is both not connected to external power and not turned on. Philips asserts, therefore, that unless the Court construes "when" to mean "as a result of" the causal connection will not be clear to the jury.

The Court finds that the patent does not, however, require that the alarm actually be triggered by the two events but only that the alarm function when the two events occur. Thus, if the power supply is connected to AC power and the defibrillator is turned on the power supply will be prevented from activating the alarm. Because the patent language already makes this relationship clear the Court declines to construe it further.

8. A method of supplying power from an external power source to a battery-powered medical device for charging a battery of the medical device and operating the medical device (ZOLL's '807 Patent)

Philips requests that the Court construe the claim language to add the words "by a power supply" to make "the method of supplying power" clear to the jury. This Court, however, agrees with ZOLL that the inclusion is unnecessary. The language in Claim 15 already indicates that "the method of supplying power" includes "providing a power supply." As a result, the additional inclusion is superfluous and the Court declines to construe this term.

9. Power supply (ZOLL's '807 Patent)

ZOLL argues that "power supply" is a common term that requires no construction. This Court agrees with Philips, however, that the term requires construction to improve juror comprehension but declines to adopt Philips' proposed construction, particularly the inclusion of the words "connects to a source of AC power." That language is too narrow to address the actual invention. For example, Claim 1 recites a "connection for bringing external power into the power supply." Such language suggests that the power supply does not always connect directly to a source of AC power. Instead, the Court relies on the patent specification to adopt the construction "a unit that connects to a device and that supplies power to the device."

10. Envelope comprising a sheet of material (ZOLL's '250 Patent)

The underlying dispute over the two claim terms in the '250 patent relates to whether the "envelope" must be fully enclosed. ZOLL asserts that the term should be given its "ordinary meaning" and thus does not require construction. Philips, on the other hand, relies on the purpose of the invention to argue that an envelope must be an "enclosure." This Court agrees with Philips and construes the term to mean "a sheet of material that forms an enclosure."

Claim 1 teaches that the envelope has a releasable "seal" that forms a "sealed first compartment" and allows the electrodes

to be "isolated from an external environment." This isolation is described as necessary to "prevent[] the adhesive gel from drying out." The Court is persuaded that if the envelope did not "enclose" the electrodes, the gel would dry out and the invention would not work as described. As a result, the Court finds that the "envelope" is an enclosure.

11. Seal (ZOLL's '250 Patent)

This term is closely related to the "envelope" construed in the proceeding section. ZOLL argues that the seal need only provide a "barrier" that serves as "something that closes the envelope by joining parts of it together." This construction, however, ignores the purpose of the invention. As Philips points out, a porous barrier could still join the parts together but would not serve the purpose of the invention. If the seal is not airtight, it will not "isolate the electrode from the external environment" as the patent requires.

Further, the '250 patent uses the terms "seal" and "barrier" differently. For example, in Claim 13 the "gasket" that allows the wires that connect to the electrode to pass through the envelope is described as a "barrier element". Because the gasket allows items to pass through, it is not airtight. That word choice suggests that the patentee chose the term "seal" to distinguish from other non-airtight barriers within the same invention. The seal is also repeatedly described as a "heat

seal", which is further evidence that it is intended to be airtight. As a result, the Court construes "seal" to mean an "airtight barrier."

> **12. A concentration of an electrolyte that produces a combination series resistance of two of said electrodes, when measured with the electrodes configured in a series circuit with a 50Ω resistance, and with the electrolytic gel layer of each electrode in contact with that of the other electrode, that is greater than 1Ω when a 200 Joule defibrillation pulse is discharged into the series circuit** (ZOLL's '526 Patent)

ZOLL asserts that no construction is needed. Philips, responds however, that Claim 1 of the '526 patent is indefinite because there is no explanation "for how one skilled in the art would choose specific testing conditions to determine whether the resistance of a given gel electrode is 'greater than 1Ω'." A term is indefinite where the product "might or might not infringe depending on its usage in changing circumstances." Geneva Pharms. Inc. v. GlaxoSmithKline PLC, 349 F.3d 1373, 1384 (Fed. Cir. 2003).

According to Philips, gel electrodes are tested under the industry standards for defibrillators set by the Association for Advancement of Medical Instrumentation (AAMI). These standards include a variety of test conditions including the temperature of the gel, the amount of time the gel has been exposed to air (humidity) and the number of shocks delivered through the gel. The '526 patent does not, however, specify the test conditions

necessary to determine whether the claim limitation is met. Philips conducted testing under a variety of temperature conditions. At 35° centigrade ("C") the resistance did not exceed 1Ω but at 15C it did. Thus, depending on the temperature, the same gel electrode may or may not infringe Claim 1. Philips also conducted tests with varying degrees of dryness in the electrode gel and number of shocks to the electrode and elicited results that both did and did not infringe Claim 1.

ZOLL contends that the testing conditions are apparent to a skilled artisan who would know that when testing conditions are not specified the tests should be conducted at room temperature, shortly after removing the electrodes from their packaging and without performing numerous previous shocks. Furthermore, ZOLL argues that Philips fails to mention that the AAMI standards do not include any requisite parameters and thus describe as much as the '526 patent does. Finally, ZOLL asserts that descriptions of electrode resistance tests that do not include those parameters are commonly described in the technical literature.

Patent claims must state with particularity the subject matter which the applicant regards as his invention. 35 U.S.C. § 112. That definiteness requirement serves a public notice function and ensures that patent claims will be "sufficiently precise to permit a potential competitor to determine whether or not he is infringing." Amgen Inc. v. Hoechst Marion Roussel,

Inc., 314 F.3d 1313, 1342 (Fed Cir. 2003) (internal quotation omitted).

Proof of indefiniteness of patent claims, enough to render a patent invalid, is met where an accused infringer shows, by clear and convincing evidence, that a skilled artisan could not discern the bounds of the claim "based upon the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area." Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1249-50 (Fed. Cir. 2008). The bar is high: "a claim is not indefinite merely because its scope is not ascertainable from the face of the claims." Amgen, 314 F.3d at 1342. Instead, it must be "insolubly ambiguous" such that "reasonable efforts at claim construction prove futile." Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2010). Indeed,

> Even if it is a formidable task to understand a claim, and the result not unanimously accepted, as long as the boundaries of a claim may be understood it is sufficiently clear to avoid invalidity for indefiniteness.

Invitogen Corp. v. Biocrest Mfg., L.P., 424 F.3d 1374, 1383 (Fed. Cir. 2005) (internal quotation omitted); see also Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1379 (Fed. Cir. 2001) ("Provided that the claims are enabled, and no undue experimentation is required, the fact that some experimentation may be necessary to determine the scope of the claims does not

render the claims indefinite.").

Although it is true that "the same principles that generally govern claim construction are applicable to determining whether allegedly indefinite claim language is subject to construction," Praxair, Inc. v. ATMI, Inc., 543 F.3d 1306, 1319 (Fed. Cir. 2008) (citation omitted), there are several reasons to defer rulings on indefiniteness until the summary judgment stage, CSB-Syst. Int'l Inc. v. SAP Am., Inc., No. 10-2156, 2011 WL 3240838, at *17-18 (E.D. Pa. July 28, 2011). Those reasons include the fact that an allegedly infringing party must prove indefiniteness by "clear and convincing proof" to overcome the statutory presumption of validity and that

> unlike a Markman proceeding that gives meaning to patent claims, indefiniteness invalidates the claims entirely. As such, this dispositive effect is more appropriately tackled at summary judgment.

Id. at *18 (citing numerous instances in which courts elected to defer indefiniteness until summary judgment).

This is not a case where a defense of indefiniteness is based upon claims which, on their face, are so vague that they cannot reasonably be interpreted but rather is a case where the relevant claims can be construed but are alleged to be indefinite as applied. Compare Am. Med. Systs., Inc. v. Biolitec, Inc., 666 F. Supp. 2d. 216, 223 (D. Mass. 2009)(construing a claim as indefinite where claim language was subject to "multiple conflicting interpretations"); with Takeda Pharm. Co. v. Handa

Pharms., LLC, 2012 WL 1243109, at *16 (N.D. Cal. Apr. 11, 2012) (deferring indefiniteness until summary judgment because whether a skilled artisan could determine relevant amounts without undue experimentation was a "largely factual" inquiry). Here, the parties' respective experts offer extrinsic evidence as to whether the disclosure of the patent is sufficient to allow a person of ordinary skill to identify the relevant testing conditions necessary to determine whether the electrode infringes. This "battle of the experts" is not, therefore, properly decided at the claim construction phase.

The Court declines to construe this term. Philips is not, however, foreclosed from challenging the validity of this claim for indefiniteness at summary judgment.

13. User-triggered inquiry/user-triggered indicator (Philips' '093 Patent)

The parties agree on the plain and ordinary meaning of "user-triggered." ZOLL, however, requests that the Court add "regardless of whether the defibrillation capability is active or not" to its construction. To support this additional limitation, ZOLL points to the patent specification which contrasts the invention with prior art defibrillators because "the present invention" permits "the user-initiated inquiry to be carried out whether or not the defibrillator is turned on." Philips responds that defibrillation capability is not dependent upon whether the defibrillator is turned on. The Court agrees with Philips and

construes this term according to its ordinary meaning.

14. Detailed [audio] instructions (Philips' '785 Patent)

The dispute over this term relates to the level of "detail" the instructions require. The parties agree that the construction of this term should be informed by the prosecution history. The original application recited "prompts" and "instructions" but not "detailed instructions" and was thus rejected because such terms were broad enough to encompass the "sound or flashing light pacing signals" in the prior Lurie patent. In response, the applicants amended their application to include "detailed instructions."

Philips requests that the Court adopt the construction

> [audio] instructions that prescribe a sequence of steps for reviving a patient, such as (1) deliver a number of chest compressions, (2) deliver a certain number of breaths, (3) deliver a certain number of therapeutic shocks, (4) call 911, and/or (5) clear the patient's airway.

To reach that proposed construction, Philips relies on a statement made by the applicants in response to the original patent application rejection that:

> Various forms of detailed instructions are provided in the referenced sections of the written description, including, for example, prompting the caregiver to: deliver a number of chest compressions, deliver a certain number of breaths, deliver a certain number of therapeutic shocks, call 911, and/or clear the patient's airway. This level of instruction is not disclosed in Lurie.

ZOLL responds that the inclusion of the words "such as" in Philips' proposed construction "improperly requires the fact-finder to decide subjectively how detailed an instruction must be." This Court agrees and rejects that construction.

ZOLL, instead, requests that the Court adopt the construction

> [audio] instructions that prescribe a sequence of CPR steps, including the number of times a particular step is to be taken (if the step is to be repeated).

That construction is based on the series of diagrams in Figures 3-17 that the applicants submitted as part of the amended patent application. ZOLL argues that each of those figures "shows a process by which a user is prompted to administer a CPR step a particular number of times." This Court, however, agrees with Philips' contention that the figures are meant only to be illustrative and were not intended to represent all of the invention's functions. Thus, the Court declines to find that the "detailed instructions" must include the specific number of times a step should be repeated.

Furthermore, as the patentee's statements in prosecution quoted above indicate, the "detailed instructions" were intended to include "deliver[ing] a certain number of therapeutic shocks." In fact, several of the flow charts in the figures that ZOLL seeks to rely upon even include a step that asks whether a particular number of "consecutive shocks have been delivered."

At oral argument the parties agreed that the defibrillation shock is not a "CPR step." As a result, ZOLL's construction fails to make clear to the jury that the detailed instructions include both CPR and the invention's core function of providing defibrillator shocks. To address that concern, the Court adopts the construction "[audio] instructions that prescribe a sequence of steps for reviving a patient, including CPR and defibrillation shocks."

15. Synchronized audible [visual] prompts (Philips' '785 Patent)

Both parties agree that "synchronized" should be construed to mean that the prompts correspond to steps of the "detailed instructions." Philips requests that the Court construe this term as "audible/visual prompts corresponding to the time at which the step should be performed." ZOLL asserts that "the step" should instead be construed as "a particular step" because otherwise Philips' construction is ambiguous as to which step corresponds to which time. ZOLL's argument is unavailing because no portion of the patent specification requires the additional limitation of "a particular step." Instead, the specification states that "the rate of flashing of the visual prompt may correspond to the timing at which the step, such as CPR, is to be performed." (emphasis added). As a result, the Court adopts Philip's proposed construction.

In accordance with the foregoing,

1) "Monitoring/monitoring. . .during" means:

"measuring . . . one or more times";

2) "The discharge step/the discharging step" means

"the step of discharging the energy source";

3) The Court **declines to construe** the term "plurality of electronic switches";

4) "Prior to any attempted use of the defibrillator" means

"prior to any attempted use of the defibrillator to treat a patient, and in some cases prior to an operator turning on the defibrillator" or **" prior to an operator turning on the defibrillator";**

5) "Test signal" means

"a signal that initiates testing" in some claims, and in others, **"a signal associated with testing,"**

Construction	**Patent**	**Claims**
"A signal that initiates testing"	'374	22, 25-27, 42, 44-45, 51-52, 61-62, 64-65, 67-69, 71-72
"A signal that initiates testing"	'460	1-6
"A signal associated with testing"	'374	1-6, 10, 21, 34-37, 41, 43

6) The Court **declines to construe** the term "A heart

rate alarm circuit in which the inputs comprise an averaged QRS rate and the shock advisory indication";

7) The Court **declines to construe** the term "Generate an alarm when the monitoring circuitry determines that the external power connection is not connected to a source of external power and that the medical device to which the power supply may be connected is not turned on/Generating an alarm when the external power connection is not connected to the external power source and the medical device is not turned on";

8) The Court **declines to construe** the term "A method of supplying power from an external power source to a battery-powered medical device for charging a battery of the medical device and operating the medical device";

9) "Power supply" means

"a unit that connects to a device and that supplies power to the device";

10) "Envelope comprising a sheet of material" means

"a sheet of material that forms an enclosure";

11) "Seal" means

"airtight barrier";

12) The Court **declines to construe** the term "A concentration of an electrolyte that produces a combination series resistance of two of said electrodes, when measured with the electrodes configured in a series circuit with a 50Ω resistance, and with the electrolytic gel layer of each electrode in contact with that of the other electrode, that is greater than 1Ω when a 200 Joule defibrillation pulse is discharged into the series circuit";

13) "User-triggered inquiry/user-triggered indicator" means

"an inquiry that the user may trigger"/ "an indicator that the user may trigger";

14) "Detailed [audio] instructions" means

"[audio] instructions that prescribe a sequence of steps for reviving a patient, including CPR and defibrillation shocks";

15) "Synchronized audible [visual] prompts" means

"audible/visual prompts corresponding to the time at which the step should be performed".

So ordered.

/s/ Nathaniel M. Gorton
Nathaniel M. Gorton
United States District Judge

Dated November 26, 2012

United States District Court
District of Massachusetts

KONINKLIJKE PHILIPS N.V. AND PHILIPS ELECTRONICS NORTH AMERICA CORPORATION,	)	
Plaintiff,	)	**Civil Action No. 10-11041-NMG**
v.	)	
ZOLL MEDICAL CORPORATION,	)	
Defendant.	)	

ORDER

GORTON, J.

In accordance with a Memorandum and Order to follow:

1) Plaintiff's Motion for Summary Judgment that (1) the '187 Patent Claims are Invalid as Anticipated, or, in the Alternative, (2) Philips's Accused Products Do Not Infringe the '187 Patent (Docket No. 219) is **DENIED**;

2) Plaintiff's Motion for Summary Judgment of Invalidity of the Asserted Claims of the '526 Patent (Docket No. 223) is **DENIED**;

3) Plaintiff's Motion for Summary Judgment of No Inequitable Conduct (Docket No. 227) is **DENIED**;

4) Defendant's Motion for Summary Judgment of Laches (Docket No. 231) is **DENIED**;

5) Defendant's Motion for Summary Judgment that (1) No Asserted Claim is Entitled to a Priority Date Before May 10, 1994; (2) Asserted Claims 25, 41, 42, 43, 67-72 of the '374 Patent and Claims 1-7 of the '460 Patent are Invalid for Anticipation; and (3) Asserted Claims 66 and 73 are not Infringed (Docket No. 232) is **DENIED**;

6) Defendant's Motion for Summary Judgment of Non-Infringement of Waveform Patents ('879, '905, '978, and '454 Patents) (Docket No. 236) is **DENIED**;

7) Defendant's Motion for Summary Judgment of Invalidity for Lack of Written Description of Certain Claims of the '212 and '454 Patents (Docket No. 237) is **DENIED**;

8) Plaintiff's Motion for Order to Preclude ZOLL's Reliance on Documents Not Produced as Required by Fed. R. Civ. P. 26(a) (Docket No. 272) is **DENIED AS MOOT**;

9) The Joint Motion to Dismiss Remaining Claims with Prejudice (Docket No. 369) is **ALLOWED**.

So ordered.

/s/ Nathaniel M. Gorton
Nathaniel M. Gorton
United States District Judge

Dated November 5, 2013

United States District Court
District of Massachusetts

KONINKLIJKE PHILIPS N.V. AND PHILIPS ELECTRONICS NORTH AMERICA CORPORATION,	)	
Plaintiff,	)	**Civil Action No. 10-11041-NMG**
v.	)	
ZOLL MEDICAL CORPORATION,	)	
Defendant.	)	

MEMORANDUM & ORDER

GORTON, J.

Philips Electronics North America Corporation and its parent company Koninklijke Philips, N.V. (collectively, "Philips") brought suit against defendant ZOLL Medical Corporation ("ZOLL") in June, 2010. Philips alleges that ZOLL infringed fifteen of its patents that relate to various components of automated external defibrillators. ZOLL filed a complaint against Philips one month later in which it alleged that Philips infringed five of ZOLL's patents. The cases were consolidated in September, 2011, and trial is scheduled to begin on December 2, 2013.

The parties' seven motions for summary judgment (Dockets No. 219, 223, 227, 231, 232, 236 and 237) were denied by a Court Order entered on November 6, 2013, "with memorandum and order to

follow." The parties' joint motion to dismiss certain claims with prejudice (Docket No. 369) was, however, allowed. The Court now publishes the subject memorandum and order.

I. Legal Standard for Resolving Summary Judgment Motions

The role of summary judgment is "to pierce the pleadings and to assess the proof in order to see whether there is a genuine need for trial." Mesnick v. Gen. Elec. Co., 950 F.2d 816, 822 (1st Cir. 1991) (quoting Garside v. Osco Drug, Inc., 895 F.2d 46, 50 (1st Cir. 1990)). The burden is on the moving party to show, through the pleadings, discovery and affidavits, "that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c).

A fact is material if it "might affect the outcome of the suit under the governing law." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). "Factual disputes that are irrelevant or unnecessary will not be counted." Id. A genuine issue of material fact exists where the evidence with respect to the material fact in dispute "is such that a reasonable jury could return a verdict for the nonmoving party." Id.

Once the moving party has satisfied its burden, the burden shifts to the non-moving party to set forth specific facts showing that there is a genuine, triable issue. Celotex Corp. v. Catrett, 477 U.S. 317, 324 (1986). The Court must view the

entire record in the light most favorable to the non-moving party and make all reasonable inferences in that party's favor. O'Connor v. Steeves, 994 F.2d 905, 907 (1st Cir. 1993). Summary judgment is appropriate if, after viewing the record in the non-moving party's favor, the Court determines that no genuine issue of material fact exists and that the moving party is entitled to judgment as a matter of law.

II. Plaintiff's Motion for Summary Judgment that (1) the '187 Patent Claims are Invalid as Anticipated, or, in the Alternative, (2) Philips's Accused Products Do Not Infringe the '187 Patent

A. Background

ZOLL's '187 patent is directed to a "semi-automatic defibrillator with heart rate alarm driven by shock advisory algorithm." The "heart rate alarm circuit" described in the '187 patent is characterized by inputs that "comprise an averaged QRS rate and the shock advisory indication." This Court held in its Markman Order that it was clear from that claim language that both inputs are required.

Heart rate alarm circuits in prior art defibrillators were activated by either the heart rate ("averaged QRS rate") or a shock advisory to indicate to the operator whether the electrocardiogram shows an abnormal heart rhythm of the sort that can be corrected by defibrillation shock. For instance, the heart rate alarm circuit in the Marquette 1500 is capable of

receiving an averaged QRS rate in manual mode and a shock advisory indication in semi-automatic mode but not both at the same time.

ZOLL will contend at trial that two of Philips's products, the MRx and XL defibrillators, infringe the '187 patent because they have as inputs both an averaged QRS rate and a shock advisory indication when operated in semi-automatic mode. Philips disagrees and maintains that a user of those devices can receive a shock advisory indication or a heart rate alarm, but not both.

According to Philips, the issue boils down to whether the "heart rate alarm circuit" disclosed in ZOLL's '187 patent requires both inputs at the same time or not. It contends that it will prevail regardless of what interpretation the Court ultimately adopts.

B. Anticipation

Philips maintains that if the "heart rate alarm circuit" is construed as not necessarily receiving average QRS rate and shock advisory indication inputs at the same time, then the '187 patent was anticipated by the prior art Marquette 1500.

1. Legal Standard

Section 102(e) of the Patent Act provides that an invention is not patentable if it was described in a previously issued patent and is therefore "anticipated" by that earlier invention.

Parties that seek to establish invalidity by anticipation bear an "especially heavy burden." Koito Mfg. Co. v. Tum-Key-Tech, LLC, 381 F.3d 1142, 1151 (Fed. Cir. 2004). To prove invalidity by anticipation, the movant must show that

> every element and limitation of the claim was previously described in a single prior art reference, either expressly or inherently, so as to place a person of ordinary skill in possession of the invention.

Sanofi-Synthelabo v. Apotex, Inc., 550 F.3d 1075, 1082 (Fed. Cir. 2008). Furthermore,

> differences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation.

Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008). Anticipation is a question of fact and thus summary judgment of invalidity is proper only "if no reasonable jury could find that the patent is not anticipated." Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1327 (Fed. Cir. 2001).

2. Application

The Court finds that Philips has failed to carry its "especially heavy burden" of proving invalidity by anticipation at this stage in the litigation as a reasonable jury could find that the patent was not anticipated by the Marquette 1500 prior art reference. In particular, Philips has not accounted for the differences in circuitry between the prior art and '187 patent.

The evidence, viewed in the light most favorable to ZOLL, is that the Marquette 1500 is incapable of receiving "dual inputs" in semi-automatic mode, whereas the claimed term at issue involves a semi-automatic defibrillator with a circuit that is capable of receiving two different kinds of inputs.

C. Non-infringement

In the alternative, Philips argues that if the '187 patent requires that the circuit receive both inputs at the same time, then its accused products do not infringe because they are incapable of receiving both inputs at the same time.

1. Legal Standard

An infringement analysis requires 1) the Court to determine, as a matter of law, the meaning and scope of the patent claims asserted to be infringed and 2) the trier of fact to compare the properly construed claims to the device accused of infringing. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). Summary judgment of non-infringement is appropriate where

> on the correct claim construction, no reasonable jury could have found infringement on the undisputed facts or when all reasonable factual inferences are drawn in favor of the patentee.

Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1353 (Fed. Cir. 2001).

2. Application

The Court declines to enter summary judgment because its Markman Order does not construe the "heart rate alarm circuit" disclosed in the '187 patent to require simultaneous inputs. Moreover, the Court finds that there is a genuine issue of material fact as to whether Philips's products receive both QRS-based and shock advisory inputs while in semi-automatic mode. Philips asserts that the QRS-based algorithm is only operational in manual mode and never operates at the same time as the shock advisory algorithm. ZOLL responds that the QRS-based algorithm is never disabled in the MRx and XL defibrillators and therefore operates in the "background" when the accused products are used in semi-automatic mode. While the Court is skeptical of ZOLL's claim that the fact that the QRS-based algorithm is always running is sufficient to show that it is received as an input, that is a matter for the jury to determine at trial.

III. Plaintiff's Motion for Summary Judgment of Invalidity of the Asserted Claims of the '526 Patent

A. Background

ZOLL's '526 patent is directed to defibrillation electrodes, which are gel-covered plates that are placed on the patient's chest. Prior art electrodes were designed to have very low electrical resistance (what is known as "low impedance") in order to maximize the defibrillation energy

delivered to the patient. This design came at a cost: in particular, low-impedance electrodes were believed to lead to high electrical current levels at the edges of the plate and gel which increased the risk of patients experiencing such discomfort as stinging or burning.

In contrast, the '526 patent teaches that a gel-covered electrode with relatively high impedance (i.e. greater than 1Ω) reduces the risk of patient discomfort without decreasing the therapeutic benefits of a defibrillation shock. In particular, the patent calls for

> a layer of electrolytic gel comprising a concentration of an electrolyte that produces a combination series resistance of two of said electrodes, when measured with the electrodes configured in a series circuit with a 50Ω resistance, and with the electrolytic gel layer of each electrode in contact with that of the other electrode, that is greater than 1Ω when a 200 Joule defibrillation pulse is discharged into the series circuit.

In other words, the patent teaches that two electrodes are placed facing each other so that their gel layers are touching. A defibrillation pulse is then delivered through the electrodes, and the resistance of the electrode is measured. If the measured resistance is greater than 1Ω, it is high enough to meet the claims and a product that satisfied that criteria would therefore infringe.

The central issue raised by Philips's motion is how that 1Ω resistance is to be measured. Philips claims that the '526

patent specification is fatally "indefinite" because it fails to provide any "meaningful guidance" to a person of ordinary skill in the art with respect to testing parameters, specifically 1) the temperature of the testing environment, 2) the number of shocks used and 3) the age of the tested electrode. Philips contends that those parameters are important because, without further guidance, it is possible that an electrode could infringe when tested in one environment but not infringe if tested in a different environment.

ZOLL responds that the issues Philips raises are red herrings because only temperature is a true test condition and a person skilled in the art would know to run the tests under indoor room temperature. It contends that the other parameters are irrelevant because infringement is measured at the point of sale and Philips neither sells old electrodes nor electrodes that have already delivered a half-dozen or more shocks.

B. Legal Standard

A patent's specification must be sufficiently "definite" in that it must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. That requirement ensures that patent claims will be "sufficiently precise to permit a potential competitor to determine whether or not he is infringing." Amgen Inc. v. Hoechst Marion Roussel,

Inc., 314 F.3d 1313, 1342 (Fed. Cir. 2003) (internal quotation marks omitted).

Thus, a claim is considered indefinite if a person of ordinary skill in the art could not determine if a particular composition infringes based on the specification. Geneva Pharm., Inc. v. GlaxoSmithKline PLC, 349 F.3d 1373, 1384 (Fed. Cir. 2003). Absolute clarity is not necessary. Rather, only claims that are "not amenable to construction" or "insolubly ambiguous" are indefinite. Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005). Moreover, the fact that a person of ordinary skill in the art would have to engage in some experimentation to determine the scope of the claim does not render the claim indefinite, so long as the experimentation is not "undue". Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1379 (Fed. Cir. 2001).

The Federal Circuit has explained that indefiniteness is a question of law. Microprocessor Enhancement Corp. v. Tex. Instruments Inc., 520 F.3d 1367, 1374 (Fed. Cir. 2008). To the extent that this legal conclusion entails questions of fact, the party claiming invalidity by way of indefiniteness must prove those facts by clear and convincing evidence. Tech. Licensing Corp. v. Videotek, Inc., 545 F.3d 1316, 1339 (Fed. Cir. 2008).

C. Application

The Court finds that Philips has failed to make the requisite clear and convincing showing of indefiniteness. Quite simply, there is no suggestion that a person of ordinary skill in the art would not know to test at room temperature. Instead, Philips's argument boils down to whether or not testing at various temperatures within that range will result in a measurement of over 1Ω. For instance, Philips's expert measured a resistance of 0.92Ω in a 28 degrees Celsius environment and 1.36Ω at 18 degrees Celsius. ZOLL maintains that Philips's expert used inferior equipment and therefore the results should be disregarded. Ultimately, the issue of whether proper testing methods were used is a question of fact that is more appropriately resolved by the jury at trial than by the Court at the summary judgment stage. See ADC Telecomm., Inc. v. Switchcraft, Inc., 281 F. App'x 989, 992 (Fed. Cir. 2008).

IV. Plaintiff's Motion for Summary Judgment of No Inequitable Conduct

Philips also moves for summary judgment of no inequitable conduct against ZOLL. ZOLL alleges that Philips engaged in inequitable conduct by making a false declaration with respect to the self-test patents and by failing to disclose material information to the patent examiner with respect to the waveform patents.

A. Legal Standard

Inequitable conduct is a defense to patent infringement that, if established, bars enforcement of a patent. Therasense, Inc. v. Becton, Dickinson & Co., 649 F.3d 1276, 1286 (Fed. Cir. 2011). ZOLL must prove, by clear and convincing evidence, that Philips misrepresented or made a deliberate decision to withhold known material information with the specific intent to deceive the United States Patent and Trademark Office ("the PTO"). Id. at 1287, 1290. To meet the clear and convincing evidence standard, Philips's specific intent to deceive the PTO must be "the single most reasonable inference able to be drawn from the evidence." Id. at 1290.

B. Application

The Court finds that, given the disputed issues of fact, a reasonable jury could find, but would not be required to find, that the single most reasonable inference is that Philips acted with the specific intent to deceive the PTO. Philips's motion centers on two factual disputes: first, whether Carl Morgan's declaration about the publication date of the VivaLink brochure demonstrated a specific intent to deceive the PTO on a material issue and, second, whether the disclosures of Philips's predecessor-in-interest to the PTO were made with an intent to deceive. Both factual disputes involve dueling witness statements which a jury could choose to believe or not. As a

result, the issue is not susceptible to summary judgment and Philips's motion will be denied.

V. Defendant's Motion for Summary Judgment of Laches

A. Background

Philips's relevant waveform patents were issued between 1997 and 2000 while its patents related to self-testing and CPR instruction were issued between 1998 and 2002. Philips initiated litigation related to all of those patents in 2002 and the final case was resolved in 2007. In 2008, Philips began to negotiate with ZOLL to resolve licensing issues and, after the negotiations failed to produce an agreement, it filed the instant lawsuit in 2010.

ZOLL has moved for summary judgment of laches on the grounds that Philips waited 11 years after ZOLL first marketed and sold the biphasic waveform technology and nine years after ZOLL first marketed and sold a defibrillator with the allegedly infringing features to bring an infringement suit.

B. Legal Standard

Laches is an equitable defense that may bar a party from relief if its delay in bringing the claim was 1) unreasonable and inexcusable from the time when the plaintiff had actual or constructive notice of its potential claim and 2) resulted in injury or prejudice to the opposing party. A.C. Aukerman Co. v.

R.L. Chaides Const. Co., 960 F.2d 1020, 1034–35 (Fed. Cir. 1992). Prejudice can be evidentiary or economic.

In the patent context, a statutory presumption of laches arises if a preponderance of the evidence reveals that the patentee delayed filing suit without excuse for more than six years after actual or constructive knowledge of the defendant's alleged infringing activity. Id. at 1034–36. Even if the presumption is rebutted, unreasonable delay and prejudice may still bar a plaintiff's claim. Id. at 1038. As an equitable defense, however, laches is not applied mechanically. Rather,

> laches is not established by undue delay and prejudice. Those factors merely lay the foundation for the trial court's exercise of discretion. When there is evidence of other factors which would make it inequitable to recognize the defense despite undue delay and prejudice, the defense may be denied.

Id. at 1036. Because the laches defense is "fact-intensive," summary judgment will often be inappropriate. See, e.g., Rockwell Int'l Corp. v. SDL, Inc., 103 F. Supp. 2d 1192, 1196 (N.D. Cal. 2000).

C. Application

ZOLL argues that Philips had constructive notice of potential infringement in 1999 when ZOLL first marketed and sold a defibrillator using biphasic waveform technology and that Philips's subsequent litigation against different parties does not excuse its delay in filing suit against ZOLL.

Philips disputes ZOLL's timeline and asserts that any delay was reasonable and should be excused. It contends that it first became aware of potential infringement in 2008 and, to the extent that it was aware of ZOLL's infringement earlier than 2008, the delay in filing suit was reasonable because of ongoing litigation and its 2008 negotiations with ZOLL.

The most important dispute concerns whether Philips's undisputed awareness of ZOLL's use of biphasic waveform technology also constituted constructive notice that ZOLL was violating Philips's waveform patents. ZOLL argues that Philips' awareness put it on notice of potential violations. Philips responds that many technologies use biphasic waveforms such that their use by ZOLL would not put Philips on notice of a potential infringement. This highly technical dispute is not susceptible to summary judgment because it involves disputed facts and questions of witness credibility. Accordingly, the Court will deny ZOLL's motion for summary judgment of laches.[1]

[1] Because the Court will deny defendant ZOLL's motion for summary judgment of laches (Docket No. 231), it is unnecessary for the Court to address plaintiff Philips's motion to preclude ZOLL from relying on certain documents in its laches motion (Docket No. 272). That motion will therefore be denied as moot.

VI. Defendant's Motion for Summary Judgment that (1) No Asserted Claim is Entitled to a Priority Date Before May 10, 1994; (2) Asserted Claims 25, 41, 42, 43, 67-72 of the '374 Patent and Claims 1-7 of the '460 Patent are Invalid for Anticipation; and (3) Asserted Claims 66 and 73 are not Infringed

As an initial matter, the parties' joint motion to dismiss certain claims (Docket No. 369) narrows the scope of the instant motion. The Court will limit its analysis to arguments pertaining to claims 41, 42, 43, 66, 67, 68 and 73 of the '374 patent and claim 7 of the '460 patent.

A. Priority Dates for the '374 and '460 Patents

The main issue underlying this motion is whether Philips is entitled to claim an earlier priority date for its '374 and '460 patents. The four relevant dates for the purposes of the instant motion are:

(1) **May 18, 1993:** the date on which the '631 application ("the first application") was filed. Carl Morgan was named as the sole inventor. It disclosed a defibrillator that performs periodic, automatic self-tests through a microprocessor and without user intervention and then indicates the results on a visual status indicator.

(2) **March 11, 1994:** the date on which the prior art "Wiley patent" application was filed. It disclosed an external defibrillator capable of performing self-tests in order to monitor the operational status of the defibrillator and to indicate when some or all of the defibrillator is inoperable. The defibrillator disclosed by the Wiley patent detects when it is in a "quiescent" state and conducts automatic self-tests without user intervention.

(3) **May 10, 1994:** the date on which the '374 application ("the second application") was filed as a

> "continuation-in-part" to the first application. It named five additional inventors and included some new material. The Wiley patent was not cited during prosecution of this patent.

(4) **April 16, 1997:** the date on which the '460 application was filed. The parties agree that the '460 patent includes a specification that is substantially similar to the '374 application.

In this case, the parties dispute whether Philips is entitled to claim the filing date of the '631 application as the priority date for the '374 and '460 patents such that the Wiley patent is not prior art as to those patents. ZOLL seeks summary judgment that the earliest priority date that Philips can claim for its '374 and '460 patents is May 10, 1994 and therefore several of its claims under those patents are invalid as anticipated by prior art.

1. Legal Standard

Section 102(e) of the Patent Act provides that a patent is invalid as anticipated if the underlying invention was described in a published United States patent application filed before the invention's effective reference date. However, an inventor can "swear behind" the prior art patent application and claim the "priority date" of an earlier-filed application if

> (1) the written description of the earlier filed application discloses the invention claimed in the later filed application to satisfy the requirements of § 112; (2) the applications have at least one common inventor; (3) the later application is filed before the issuance or abandonment of the earlier filed

> application; and (4) the later application contains a reference to the earlier filed application.

In re NTP, Inc., 654 F.3d 1268, 1277 (Fed. Cir. 2011).

The issue here is whether the written description in the earlier-filed '631 application discloses the inventions claimed in the later-filed '374 and '460 patents. The "written description" requirement in the context of a CIP application holds that the earlier-filed application must describe the invention in "sufficient detail" such that one skilled in the art could "clearly conclude" that the inventor "possessed" the invention as of the earlier filing date. Lockwood v. Am. Airlines, Inc., 107 F.3d 1565, 1572 (Fed. Cir. 1997).

Whether the inventor "possessed" the invention as of the earlier filing date is a question of fact. Ariad Pharms., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). The Federal Circuit has noted that the amount of detail required to demonstrate possession as of an earlier date depends on the context. Id. Factors relevant to the inquiry include "the nature and scope of the claims and . . . the complexity and predictability of the relevant technology." Id.

The inquiry requires courts to proceed on a claim-by-claim basis because each claim in the later-filed application must be supported by the earlier application. Subject matter that arises for the first time in a CIP application does not receive

the earlier filing date of the "parent" application. Augustine Med., Inc. v. Gaymar Indus., Inc., 181 F.3d 1291, 1302 (Fed. Cir. 1999). As a result, it is possible for some claims in a CIP application to receive the benefit of an earlier filing date while others do not. Id.

As always, the challenged patent is entitled to a presumption of validity and "the burden of persuasion to the contrary is and remains on the party asserting invalidity." Ralston Purina Co. v. Far-Mar-Co, Inc., 772 F.2d 1570, 1573 (Fed. Cir. 1985). Where, as here, the U.S. Patent and Trademark Office did not make an explicit finding as to the correct filing date for the CIP application, the challenger bears the initial burden of establishing a prima facie case of invalidity by clear and convincing evidence. Specifically, it must show that prior art that anticipated the invention disclosed in the CIP application predated the filing of the CIP application. See PowerOasis, Inc. v. T-Mobile USA, Inc., 522 F.3d 1299, 1303-06 (Fed. Cir. 2008). If that requirement is met, the burden shifts to the patent-holder to come forward with evidence to prove that it is entitled to an earlier filing date. Id. It should produce "sufficient evidence and argument to show that an ancestor [to the CIP patent] contains a written description that supports all of the limitations of . . . the claim[s] being asserted." Tech. Licensing Corp., 545 F.3d at 1327. If the patent-holder

produces sufficient evidence, the burden again shifts to the challenger to overcome the presumption of validity with convincing evidence that the patentee is not entitled to the earlier date. Id. at 1328.

2. Application

The Court will not enter summary judgment on this matter. The parties' experts disagree about whether a person of ordinary skill in the art would have understood Philips to "possess" the disputed claims at the time the '631 application was filed. ZOLL has not carried its burden of presenting clear and convincing evidence that Philips is not entitled to the earlier filing date and therefore is not entitled to summary judgment in its favor. As the priority date remains in dispute, summary judgment of anticipation is unwarranted.

B. Non-Infringement of Claims 66 and 73 of '374 Patent

ZOLL also argues that its accused products do not infringe because claims 66 and 73 of the '374 patent require "recalibrating" as part of the self-testing process and ZOLL's products do not recalibrate during self-tests. Philips has, however, presented evidence that suggests that ZOLL's products undergo a process where "bad" data is replaced with "good" data. After construing the facts in favor of Philips as the non-moving party, the Court finds that a reasonable jury could determine

that such a process entailed recalibration and therefore declines to enter summary judgment in ZOLL's favor.

VII. Defendant's Motion for Summary Judgment of Non-Infringement of Waveform Patents ('879, '905, '978, and '454 Patents)

ZOLL also seeks summary judgment of non-infringement on the grounds that its accused products involve a fundamentally different method for generating defibrillation shock waveforms for a particular patient than the methods claimed by Philips's waveform patents.

As described above, summary judgment of non-infringement is appropriate where, "on the correct claim construction, no reasonable jury could have found infringement" on the undisputed facts or when all reasonable factual inferences are drawn in favor of the patentee." Netword, LLC, 242 F.3d at 1353.

There are several factual disputes that preclude the entry of summary judgment in ZOLL's favor. ZOLL, for example, contests vigorously Philips's claim that ZOLL's technologies infringe on the '879 patent's method of "measuring a patient's impedance during the discharge step." ZOLL argues that although its defibrillators "calculate" patient impedance "during" the discharge step, they measure the current at a different moment such that any measurement of patient impedance does not occur "during" the discharge step. Defibrillator technology is undoubtedly complex but the Court finds it squarely within the

realm of possibility that a reasonable jury could find that, in fact, ZOLL's "calculating" infringes on Philips' patent covering the act of "measuring." As a result, it will not grant summary judgment on this motion.

VIII. Defendant's Motion for Summary Judgment of Invalidity for Lack of Written Description of Certain Claims of the '212 and '454 Patents

First, the Court notes that, for the most part, this motion involves claims that were dismissed as a result of the parties' joint motion. Philips will not assert claims 8-10 and 12 with respect to the '212 patent at trial and therefore the Court will not address ZOLL's arguments with respect to those claims here. With respect the '454 patent, the joint motion to dismiss stipulates that claims 51, 53 and 54 will be at issue at trial. Claim 52 is not mentioned in the motion. The Court therefore assumes that only claim 51 of the '454 patent is at issue.

A. Legal Standard

At issue in this motion is whether claim 51 of the '454 patent satisfies the "written description" requirement described in the first paragraph of § 112 of the Patent Act. That provision states that

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set

> forth the best mode contemplated by the inventor of carrying out his invention.

35 U.S.C. § 112. To satisfy the written description requirement, "the description must 'clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.' " Ariad Pharms., 598 F.3d at 1351 (quoting Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1562-63 (Fed. Cir. 1991)).

The written description inquiry is a question of fact. Id. (citing Ralston Purina, 772 F.2d at 1575). At the summary judgment stage, Philips is entitled to a presumption that the '454 patent is valid. 35 U.S.C. § 282. ZOLL may of course rebut that presumption but must do so with clear and convincing evidence. Microsoft Corp. v. i4i Ltd. P'ship, 131 S. Ct. 2238, 2242 (2011).

B. Application

The parties disagree about whether claim 51 of the '454 patent satisfies the written description requirement. It is undisputed that the '454 patent resulted from an application that amended claims in an earlier application. Furthermore, it is undisputed that the following language was added to the '454 application as part of claim 51 and did not appear in the earlier version:

> removing the additional impedance from the electrical circuit if the electrical parameter is within a

> defined range prior to the end of the discharging step.

ZOLL argues that this part of the claim is not supported by the specification of '454. Yet Philips points to language in the '454 specification that states that

> If the peak current is below a circuit safety threshold, then switch 66 is closed to take safety resistor 64 out of the circuit.

A reasonable jury could find that the written description is satisfactory based on that language. While ZOLL may be able to proffer evidence showing that such provisions do not support claim 51 at trial, it has not made a sufficiently clear and convincing showing to warrant summary judgment in its favor.

ORDER

Accordingly, as previously ruled in the Order of this Court entered on November 6, 2013 (Docket No. 447):

1) Plaintiff's Motion for Summary Judgment that (1) the '187 Patent Claims are Invalid as Anticipated, or, in the Alternative, (2) Philips's Accused Products Do Not Infringe the '187 Patent (Docket No. 219) is **DENIED;**

2) Plaintiff's Motion for Summary Judgment of Invalidity of the Asserted Claims of the '526 Patent (Docket No. 223) is **DENIED;**

3) Plaintiff's Motion for Summary Judgment of No Inequitable Conduct (Docket No. 227) is **DENIED;**

4) Defendant's Motion for Summary Judgment of Laches (Docket No. 231) is **DENIED;**

5) Defendant's Motion for Summary Judgment that (1) No Asserted Claim is Entitled to a Priority Date Before May 10, 1994; (2) Asserted Claims 25, 41, 42, 43, 67-72 of the '374 Patent and Claims 1-7 of the '460

Patent are Invalid for Anticipation; and (3) Asserted Claims 66 and 73 are not Infringed (Docket No. 232) is **DENIED;**

6) Defendant's Motion for Summary Judgment of Non-Infringement of Waveform Patents ('879, '905, '978, and '454 Patents) (Docket No. 236) is **DENIED;**

7) Defendant's Motion for Summary Judgment of Invalidity for Lack of Written Description of Certain Claims of the '212 and '454 Patents (Docket No. 237) is **DENIED;**

8) Plaintiff's Motion for Order to Preclude ZOLL's Reliance on Documents Not Produced as Required by Fed. R. Civ. P. 26(a) (Docket No. 272) is **DENIED AS MOOT;**

9) The Joint Motion to Dismiss Remaining Claims with Prejudice (Docket No. 369) is **ALLOWED.**

So ordered.

/s/ Nathaniel M. Gorton
Nathaniel M. Gorton
United States District Judge

Dated November 19, 2013

United States District Court
District of Massachusetts

KONINKLIJKE PHILIPS N.V. and PHILIPS ELECTRONICS NORTH AMERICA CORPORATION,	)	
Plaintiffs/ Counter-Defendants,	)	**Civil Action No. 10-11041-NMG**
v.	)	
ZOLL MEDICAL CORPORATION,	)	
Defendant/ Counter-Claimant.	)	

MEMORANDUM & ORDER

GORTON, J.

This Memorandum and Order addresses motions submitted pursuant to Fed. R. Civ. P. 50(a) and 52(c) by plaintiffs/ counter-defendants Koninklijke Philips, N.V. and Philips Electronics North America Corporation (collectively, "Philips") and defendant/counter-claimant ZOLL Medical Corporation ("ZOLL").

The Court denies the motions to the extent that the issues raised therein were presented to the jury for findings because there was a legally sufficient basis for a reasonable jury to find in favor of either party on those issues.

The Court will, however, allow Philips's motion for judgment as a matter of law pursuant to Fed. R. Civ. P. 50(a) on

its counterclaim of non-infringement of United States Patent No. 5,391,187 ("the '187 patent") by the Philips HeartStart MRx defibrillator ("the MRx"). The question of whether ZOLL established infringement of the '187 patent by the MRx was not submitted to the jury because ZOLL withdrew that claim before trial began and did not present evidence at trial. As this Court found in a related case, ZOLL Medical Corp. v. Philips Electronics North America Corporation, Civil Action No. 14-10029-NMG, ECF No. 24, Philips is therefore entitled to judgment in its favor on its counterclaim for a declaratory judgment of non-infringement.

Philips also moved under Fed. R. Civ. P. 52(c) for judgment in its favor on ZOLL's inequitable conduct, laches, equitable estoppel and double-patenting defenses. ZOLL abandoned its defense of inequitable conduct and therefore Philips is entitled to judgment in its favor as to that defense. The defenses of laches, equitable estoppel and double-patenting have been addressed in separate Orders and therefore Philips's motion with respect to those defenses will be denied as moot.

ORDER

For the foregoing reasons,

1) Philips's Rule 52(c) Motion for Judgment as a Matter of Law on ZOLL Medical Corporation's Equitable Defenses (Docket No. 534) is, with respect to the defense of inequitable conduct, **ALLOWED**, but is, with respect to the defenses of laches and equitable estoppel, **DENIED AS MOOT**;

2) Philips's Rule 50(a) Motion for Judgment as a Matter of Law that ZOLL's Patents are Invalid and Not Infringed (Docket No. 535) is, with respect to its counterclaim of non-infringement of U.S. Patent No. 5,391,187 by its HeartStart MRx defibrillator, **ALLOWED**, but is, in all other respects, **DENIED**;

3) Philips's Rule 50(a) Motion for Judgment as a Matter of Law that Philips's Patents are Infringed and Not Invalid (Docket No. 536) is, with respect to the issue of obviousness-type double patenting, **DENIED AS MOOT**, and is, in all other respects, **DENIED**; and

4) ZOLL's Motion for Judgment as a Matter of Law Under Fed. R. Civ. P. 50(a) (Docket No. 537) is **DENIED**.

So ordered.

/s/ Nathaniel M. Gorton
Nathaniel M. Gorton
United States District Judge

Dated June 20, 2014

United States District Court
District of Massachusetts

KONINKLIJKE PHILIPS N.V. and PHILIPS ELECTRONICS NORTH AMERICA CORPORATION,	)	
Plaintiffs/ Counter-Defendants,	)	**Civil Action No. 10-11041-NMG**
v.	)	
ZOLL MEDICAL CORPORATION,	)	
Defendant/ Counter-Claimant.	)	

ORDER OF FINAL JUDGMENT AS TO LIABILITY

In accordance with the jury verdict of December 19, 2013, it is hereby **ORDERED:**

1) Judgment shall enter in favor of plaintiffs/counter-defendants Koninklijke Philips N.V. and Philips Electronics North America Corporation (collectively, "Philips") and against defendant/counter-claimant ZOLL Medical Corporation ("ZOLL") on Count 1 of Philips's Second Amended Complaint (Docket No. 36) and on Counts 1 and 16 of ZOLL's Second Amended Counterclaim (Docket No. 38) to the extent that it is adjudged that Claim 51 of U.S. Patent No. 5,607,454 is infringed by the ZOLL AED Plus, AED Pro, R Series, E Series, M Series and X Series defibrillators and is not invalid;

2) Judgment shall enter in favor of Philips and against ZOLL on Count 4 of Philips's Second Amended Complaint and on Counts 4 and 19 of ZOLL's Second Amended Counterclaim to the extent that it is adjudged that Claims 4 and 8 of U.S. Patent No. 5,749,905 are infringed by the AED Plus, AED Pro, R Series, E Series, M Series and X Series defibrillators and are not invalid;

3) Judgment shall enter in favor of Philips and against ZOLL on Count 6 of Philips's Second Amended Complaint and Counts 6 and 21 of ZOLL's Second Amended Counterclaim to the extent that it is adjudged that Claim 7 of U.S. Patent No. 5,800,460 is infringed by the AED Plus and AED Pro defibrillators and is not invalid;

4) Judgment shall enter in favor of ZOLL and against Philips on Count 8 of Philips's Second Amended Complaint and Count 8 of ZOLL's Second Amended Counterclaim to the extent that it is adjudged that Claims 4 and 5 of U.S. Patent No. 5,836,978 are not infringed by the AED Plus, AED Pro, R Series, E Series, M Series and X Series defibrillators but judgment shall enter in favor of Philips and against ZOLL on Count 23 of ZOLL's Second Amended Counterclaim to the extent that it is adjudged that Claims 4 and 5 of U.S. Patent No. 5,836,978 are not invalid;

5) Judgment shall enter in favor of Philips and against ZOLL on Count 9 of Philips's Second Amended Complaint and Counts

9 and 24 of ZOLL's Second Amended Counterclaim to the extent that it is adjudged that Claims 42, 67 and 68 of U.S. Patent No. 5,879,374 are infringed by the ZOLL AED Plus, AED Pro and R-Series defibrillators and are not invalid, Claim 43 is infringed by the AED Plus, AED Pro, R Series and X Series defibrillators and is not invalid, and Claims 66 and 73 are not invalid but judgment shall enter in favor of ZOLL and against Philips to the extent that it is adjudged that Claim 66 is not infringed by the AED Plus, AED Pro, E Series and R Series and Claim 73 is not infringed by the AED Plus and AED Pro;

6) Judgment shall enter in favor of Philips and against ZOLL on Count 10 of Philips's Second Amended Complaint and Counts 10 and 25 of ZOLL's Second Amended Counterclaim to the extent that it is adjudged that Claims 1 and 5 of U.S. Patent No. 6,047,212 are infringed by the AED Plus, AED Pro, R Series and X Series defibrillators and are not invalid;

7) Judgment shall enter in favor of ZOLL and against Philips on Count 13 of Philips's Second Amended Complaint and Count 13 of ZOLL's Second Amended Counterclaim to the extent that it is adjudged that Claims 1 and 7 of U.S. Patent No. 6,356,785 are not infringed by the AED Plus, AED Pro, E Series and X Series defibrillators but judgment shall enter in favor of Philips and against ZOLL on Count 28 of ZOLL's Second Amended

Counterclaim to the extent that it is adjudged that Claims 1 and 7 of U.S. Patent No. 6,356,785 are not invalid;

8) Judgment shall enter in favor of ZOLL and against Philips on Count 1 of ZOLL's Complaint (Case 1:10-cv-11162, Docket No. 1) and Counts 1 and 6 of Philips's Counterclaim (Docket No. 13) to the extent that it is adjudged that the Philips HeartStart FR2 Infant/Child Pads, HeartStart Infant/ Child Smart Pads and HeartStart Adult Smart Pads infringe Claims 1, 8, 9, 11, 12, 19, 24 and 25 of U.S. Patent No. 5,330,526; the Adult Plus MFE Electrode Pads and Multi-Function Pediatric Defibrillation Electrodes infringe Claims 1, 11, 12, 19 and 24; The HeartStart Adult Preconnect MFE Pads infringe claims 1, 9, 11, 12, 19 and 24; the Adult Radiotransparent/Reduced Skin Irritation Pads infringe Claims 1, 11, 12, 19 and 24; the Pediatric Radiotransparent/Reduced Skin Irritation Pads infringe Claims 11, 12 and 19; and Claims 1, 2, 3, 8, 9, 11, 12, 19, 23, 24 and 25 are not invalid; but judgment shall enter in favor of Philips and against ZOLL to the extent that it is adjudged that Claims 2, 3 and 23 of U.S. Patent No. 5,330,526 are not infringed by any of the aforementioned devices and Claim 1 is not infringed by the Pediatric Radiotransparent/Reduced Skin Irritation Pads;

9) Judgment shall enter in favor of ZOLL and against Philips on Count 2 of ZOLL's Complaint and Counts 2 and 7 of

Philips's Counterclaim to the extent that it is adjudged that Claims 1 and 4 of U.S. Patent No. 5,391,187 are infringed by the Philips HeartStart XL defibrillator and are not invalid but judgment shall enter in favor of Philips and against ZOLL to the extent that it is adjudged that Claims 1 and 4 are not infringed by the Philips HeartStart MRx defibrillator;

10) Philips's claims for judgment of infringement with respect to U.S. Patent Nos. 5,721,482 (Count 2), 5,735,879 (Count 3), 5,773,961 (Count 5), 5,803,927 (Count 7), 6,178,357 (Count 11), 6,304,783 (Count 12), 6,441,582 (Count 14), and 6,871,093 (Count 15) are DISMISSED;

11) ZOLL's counterclaims for a declaratory judgment of non-infringement with respect to U.S. Patent Nos. 5,721,482 (Count 2), 5,735,879 (Count 3), 5,773,961 (Count 5), 5,803,927 (Count 7), 6,178,357 (Count 11), 6,304,783 (Count 12), 6,441,582 (Count 14), and 6,871,093 (Count 15) are DISMISSED;

12) ZOLL's counterclaims for a declaratory judgment of invalidity with respect to U.S. Patent Nos. 5,721,482 (Count 17), 5,735,879 (Count 18), 5,773,961 (Count 20), 5,803,927 (Count 22), 6,178,357 (Count 26), 6,304,783 (Count 27), 6,441,582 (Count 29), and 6,871,093 (Count 30) are DISMISSED;

13) ZOLL's claims for a judgment of infringement of U.S. Patent Nos. 5,470,343 (Count 3), 5,575,807 (Count 4) and RE39,250 (Count 5) are DISMISSED;

14) Philips's counterclaims for a declaratory judgment of non-infringement of U.S. Patent Nos. 5,470,343 (Count 3), 5,575,807 (Count 4) and RE39,250 (Count 5) are DISMISSED; and

15) Philips's counterclaims for a declaratory judgment of invalidity of U.S. Patent Nos. 5,470,343 (Count 3), 5,575,807 (Count 4) and RE39,250 (Count 5) are DISMISSED.

Dated June 20, 2014

/s/ Nathaniel M. Gorton
Nathaniel M. Gorton
United States District Judge