United States District Court,
D. New Jersey.

METROLOGIC INSTRUMENTS, INC,
Plaintiff.
v.
SYMBOL TECHNOLOGIES, INC,
Defendant.

Civil Action No. 03-2912 (HAA)

Sept. 29, 2006.

Background: Patent holder brought action against competitor alleging infringement of patents directed toward automatically-operated laser bar code readers. Court set out to determine meanings of various disputed claims after completion of discovery.

Holdings: The District Court, Ackerman, Senior District Judge, held that:
(1) visible laser diode structure was normally-off;
(2) photoreceiver and preamplifier were needed to perform function of "automatically producing scan data indicative of the detected light intensity";
(3) patentee's allegedly disavowing statements did not constitute clear disavowal of claim scope;
(4) decoding microprocessor was initially off;
(5) decoding microprocessor was not responsive to any activation control signal;
(6) requirement in limitation did not foreclose downwardly-directed laser beam;
(7) means-plus-function analysis was necessary with regard to bar code symbol detection means limitation; and
(8) term "read" could not be construed narrowly to mean "decoded."

Claims construed.

5,260,553, 5,340,971, 5,925,870, 5,939,698. Construed.

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OPINION AND ORDER

ACKERMAN**, Senior District Judge.**

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This case presents one facet of a broader, multi-forum dispute between Metrologic Instruments, Inc. ("Metrologic") and Symbol Technologies, Inc. ("Symbol"), two close competitors in the design, development, manufacture, and sale of laser scanning bar code readers. Metrologic accuses Symbol of infringing three of its patents relating to automatically-operated laser bar code readers. With discovery completed, the Court must now determine the meanings of various disputed claims contained in the contested patents in accordance with the instruction of Markman v. Westview Instruments, Inc., 52 F.3d 967, 976-79 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The Court held a hearing for this purpose on March 27, 2006. Subsequently, and with the consent of counsel, the Court submitted seven supplemental questions to the parties, and the parties filed their respective responses on April 24, 2006. The Court has carefully considered all of the parties' written and oral arguments. In the Opinion that follows, the Court sets forth its constructions of the patent claims in dispute.

I. Background

A. General Principles of the Relevant Technology

The inventions described by the patents in suit are directed toward automatically-operated laser bar code readers, whose function is to scan and decode bar code symbols. Bar code symbols assume a variety of forms, but are most familiar to the lay public as the UPC bar code symbol commonly found on grocery items. These bar code symbols consist of a series of bars and spaces of contrasting darkness imprinted on a surface; the relative widths of the bars and spaces encode a numerical sequence. That numerical sequence, in turn, corresponds to a useful piece of information, such as the identity of the grocery item on which the bar code symbol is imprinted. Thus, an operator equipped with a laser bar code reader may quickly retrieve detailed information encoded in the bar code symbol.

Laser bar code readers may be either hand held or fixed mounted. In some readers, the laser beam is off until a sensor detects the presence of an object in the vicinity of the reader. A signal from the sensor then causes the laser beam to turn on, or "initiate," automatically. This general process is known as "object detection" and is a common feature of "automatic" laser bar code readers. Object detection may take place before the laser bar code reader scans an object with the laser beam.

Most laser bar code readers today contain many of the same basic elements. A laser diode emits a laser beam that is directed to a mirror known generally as the "scanning mirror." The scanning mirror is moved by a motor, thereby projecting the beam in a pattern. When the laser beam crosses the bar code symbol, the laser light is reflected off the bar code symbol, with the white spaces reflecting more light than the black bars.

Some of the laser light reflected off of bar code symbols and other objects returns to the bar code reader, where it is detected by a component of the bar code reader known as a photoreceiver. A photoreceiver often consists of a photodiode, a device that converts light energy into an electrical signal. The electrical signal is an electronic representation of the object scanned by the laser beam. When the scanned object is a bar code symbol, the electrical signal represents the bar-and-space pattern.

A bar code reader must be able to differentiate between the laser light reflected by a bar code and the laser light reflected by other objects. The bar code reader accomplishes this task by performing one or more tests on the electrical signal generated by the photoreceiver. By analyzing the electrical signal in this manner, the bar code reader is able to detect electrical signals representing the bar-and-space pattern of a bar code symbol. This process is known generally as "bar code detection."

Once the bar code reader has determined that the electrical signal represents a bar code, the bar code reader will proceed to "decode" the bar code in order to recover the encoded information (known as "character data"). Upon a successful decoding, the bar code reader "outputs" the character data to an interface where the operator of the bar code reader may readily retrieve the encoded information. An example of such an interface might be a cash register that rings up the scanned item.

B. History of Parties' Relationship

Metrologic and Symbol have been two of the leading innovators in the field of laser scanning bar code readers. In the early 1980s, Symbol invented the first hand-held laser scanning bar code reader, the triggered scanner, for which Symbol received several patents. The triggered scanner requires the operator to trigger the device's operation manually.

In the late 1980s and early 1990s, Symbol brought lawsuits against several of its competitors, including Metrologic, for infringement of its triggered scanner patents. Consequently, Metrologic removed its triggered hand-held scanner from the market and developed a "triggerless," or automatic, hand-held laser scanning bar code reader, which initiated laser scanning without the use of a manual trigger.

On January 1, 1996, Metrologic and Symbol signed a patent cross-license agreement. The agreement purported to define the parties' respective rights in various technologies pertaining to bar code scanners. Although the parties' respective rights under this agreement comprise part of the instant dispute, this issue does not affect the Court's analysis here.

Metrologic now contends that two of Symbol's bar code reader products, the M2000 and LS 1900 products, infringe three of Metrologic's patents under which Symbol does not hold licenses. Symbol insists that its products are non-infringing. The parties also dispute the meanings of numerous claims in the three patents in suit. In anticipation of a trial on the infringement issue, this Court has held a pretrial *Markman* hearing in order to ascertain the proper construction of the claims in dispute.

C. General Description of the Relevant Patents

1. The Parent Application of the Patents in Suit

Metrologic filed the first patent application (U.S. Patent App. No. 07/583,421, or the "'421 application") for an automatic laser scanning bar code reader on September 17, 1990. The application ultimately issued as U.S. Patent No. 5,260,553 on November 9, 1993. Metrologic subsequently obtained numerous additional patents, all based in part on the original '421 application. Three of these subsequent patents form the basis of the instant dispute.

[1] [2] All three patents in suit are either continuation FN1 or continuation-in-part FN2 patents originating from the same "parent" application, the '421 application. The '421 application suggests that the main technical obstacle for the automatic bar code reader was replacing the human operator, who controlled the hand-held reader by manually triggering the device's operation, with a system controller capable of operating the reader in a diverse set of operating conditions. In the '421 application, Metrologic identified various features that it wished to incorporate in its bar code readers to accomplish this goal, such as allowing for both short- and long-range detection of bar code symbols located in the vicinity of the reader, and managing the power consumption of the reader in certain configurations. The patents in suit are representative of Metrologic's efforts in addressing the shortcomings and drawbacks of the prior art.

FN1. A continuation application is a second application for the same invention claimed in an earlier application (called the "parent" application) filed by the same inventor and containing the same disclosure as the parent application. If the continuation is filed before the parent application becomes abandoned or patented and makes a specific reference to the parent, the continuation is entitled to the benefit of the date the parent was filed. *See Manual of Patent Examining Procedure* s. 201.07 (8th ed.2005); *see also* Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc., 98 F.3d 1563, 1579 (Fed.Cir.1996) ("Although there may be some variation in the scope of the claimed subject matter, a continuation application is based solely on the disclosure of a parent application."); Renishaw P.L. C. v. Marposs Societa' Per Azioni, 974 F.Supp. 1056, 1069 (E.D.Mich.1997) ("Generally, a continuation application contains the exact same disclosure, specification, and figures of the original patent. The only thing that changes is the claims.").

FN2. A continuation-in-part application contains a substantial portion of the disclosure as contained in the parent application and is filed before the parent becomes abandoned or patented; however, a continuation-in-part application also includes new subject matter not disclosed in the parent application. The continuation-in-part application is entitled to the benefit of the parent application's filing date to the extent that they contain common subject matter. *See Manual of Patent Examining Procedure* s. 201.08 (8th ed.2005); *see also* Augustine Med., Inc. v. Gaymar Indus., Inc., 181 F.3d 1291, 1302 (Fed.Cir.1999) ("A [continuation-in-part application] contains subject matter from a prior application and may also contain

additional matter not disclosed in the prior application.... Subject matter that arises for the first time in the [continuation-in-part] application does not receive the benefit of the filing date of the parent application.").

2. United States Patent 5,939,698

United States Patent No. 5,939,698 (the "'698 patent") originated from three continuation applications of the '421 application. The '698 patent describes an automatic laser bar code reader having both a hand-held and a stand-supported mode of operation. Of the claims in dispute, claim 1 is an independent claim FN3 and claim 2 depends from claim 1.

FN3. Claims may be independent, dependent, or multiple dependent. An independent claim stands on its own and does not rely on any other claims to define its scope. A dependent claim refers back to an earlier claim and incorporates by reference any limitations (that its, express "boundaries" to the invention) described in that earlier claim. *See* Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553 (Fed.Cir.1989). To avoid redundancy, the dependent claim must add further limitations over the earlier-referenced claim. Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed.Cir.2006). Multiple dependent claims refer back in the alternative to two or more previous claims and include all limitations described in those claims. *Manual of Patent Examining Procedure* s. 608.01(n) (8th ed.2005). *See generally* Jeneric/Pentron, Inc. v. Dillon Co., No. 3:98-CV-818, 1999 WL 66537, at (D.Conn.1999) (discussing the difference between dependent and independent claims), *aff'd,* 205 F.3d 1377 (Fed.Cir.2000).

Claim 1 sets forth an automatic hand-held bar code reader with a support stand. The device in claim 1 has five major components, including (1) a housing; (2) a means for producing scan data that consists of a laser beam producing means, a scanning means, and a laser light detecting means; (3) a bar code presence detection means; (4) a symbol decoding means; and (5) system control circuitry. Claim 1 further stipulates a scanner stand. Claim 2 adds a limitation concerning the manner by which the bar code presence detection means of claim 1 detects the presence of a bar code.

3. United States Patent 5,340,971

United States Patent No. 5,340,971 (the "'971 patent") issued from a continuation-in-part application of the '421 application and contains additional material in its patent specification. The '971 patent describes an automatic laser bar code reader having a mode of operation that allows it to read consecutively different bar code symbols automatically. Of the claims in dispute, claim 44 is an independent claim and claim 46 depends from claim 44.

Claim 44 sets forth a bar code reading device with six components, including (1) a housing, (2) a laser beam producing means, (3) a laser beam scanning means, (4) a laser light detecting means, (5) a scan data processing means, and (6) a control means. Claim 46 adds a limitation concerning the manner by which the scan data processing means of claim 44 detects the presence of a bar code.

4. United States Patent 5,925,870

United States Patent No. 5,925,870 (the "' 870 patent") originated from a continuation application of two other continuation-in-part applications of U.S. Patent App. No. 07/761,123 (which itself issued as the '971 patent). The ' 870 patent describes an automatic laser bar code reader that flickers or blinks the reader's laser beam to increase the visibility of the laser scan line. The only claim in dispute from the '870 patent is independent claim 10.

Claim 10 outlines a bar code reader with eight components, including (1) a housing, (2) a system activation

means, (3) a laser beam source, (4) a laser beam directing means, (5) a scanning mechanism, (6) a light detection means, (7) a scan data processing means, and (8) a control means.

II. Principles of Law

A. The *Markman* Hearing

[3] There are two steps in a patent infringement analysis. First, the court must determine the proper construction, or meaning, of the disputed claim or claims. Second, findings must be made as to whether the accused product or method infringes the asserted claim as properly construed. *See* Markman, 517 U.S. at 377-90, 116 S.Ct. 1384. Under *Markman*, claim construction is a matter of law to be decided only by the court, whereas the issue of infringement is a question left to the factfinder. *Id*.

[4] A *Markman* hearing may be held before, during, or after discovery, and even, in theory, during the infringement trial or on post-trial motions. *See* Elf Atochem N. Am., Inc. v. Libbey-Owens-Ford Co., 894 F.Supp. 844, 850 (D.Del.1995). Although the Federal Circuit has not mandated a time for conducting *Markman* hearings, courts generally hold them before the infringement trial and after the parties have conducted discovery relating to their respective contentions as to claim construction. Within this District, for instance, it is a common practice for courts to conduct *Markman* hearings after discovery is completed. *See, e.g.,* Conopco, Inc. v. Warner-Lambert Co. (In re Conopco, Inc.), No. Civ. A. 99-101, 2000 WL 342872, at (D.N.J. Jan.26, 2000) ("[C]ourts have held that *Markman* hearings to determine proper claim construction are inappropriate prior to completion of discovery."); *see also, e.g.,* ADC Telecomm., Inc. v. Siecor Corp., 954 F.Supp. 820, 821, 826-31 (D.Del.1997); S.S. White Burs, Inc. v. Neo-Flo, Inc., No. Civ. A. 02-3656, 2003 WL 21250553, at (E.D.Pa. May 2, 2003).

[5] A fundamental principle of claim construction is that patent claims must have the same meaning to all persons at all times, and that the meanings of the claims are determined and fixed at the time the Patent and Trademark Office ("PTO") issued the patent. *See* SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1338 (Fed.Cir.2005) (en banc) ("Claim interpretation requires the court to ascertain the meaning of the claim to one of ordinary skill in the art at the time of invention."). The purpose of a *Markman* hearing is for the court and the parties to settle conclusively on the interpretation of disputed claims. *See* Elf Atochem, 894 F.Supp. at 850, 857-58. Indeed, the need for uniformity of claims' construction and concerns about fairness to competitors inform the policy of reserving the claim-construction function to the trial judge. *See* Markman, 52 F.3d at 987 ("The more appropriate analogy for interpreting patent claims is the statutory interpretation analogy. Statutory interpretation is a matter of law strictly for the court. There can be only one correct interpretation of a statute that applies to all persons.").

In some instances, claim construction may be dispositive of the entire case because the likelihood of success for one side is greater on the issue of infringement based on the court's construction. *See* Nystrom v. TREX Co., 424 F.3d 1136, 1140-41 (Fed.Cir.2005) ("Based on the district court's claim construction ruling, Nystrom conceded that he could not prove his infringement case against TREX."). In those cases, the court's and the litigants' resources may be saved by consenting to judgment. Even if the claim construction is not dispositive of the case, it will lay the groundwork for the ensuing infringement trial.

B. General Principles of Claim Construction

[6] [7] [8] [9] In interpreting a disputed claim, the court looks primarily to the intrinsic evidence in the record, "*i.e.,* the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996) (citing Markman, 52 F.3d at 979). Intrinsic evidence is the "most significant source of the legally operative meaning of disputed claim language." Id. First, the court must look to the words of the claim itself to define the proper scope of the claimed invention. When interpreting the words of the claim, "a court must presume that the terms in the

claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms." Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999). However, the court will not accord a claim term its ordinary meaning in two situations. "The first arises if the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term. The second is where the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used." Id. at 990 (internal citations omitted). In either situation, the court must adopt the proffered definition of a term. Id.

[10] [11] Claims "are part of 'a fully integrated written instrument,' " Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed.Cir.2005) (en banc) (citing Markman, 52 F.3d at 978), consisting principally of a written description of the invention, 35 U.S.C. s. 112 para. 1, often referred to as the specification,FN4 and concluding with the claims, *id*. para. 2. "For that reason, claims 'must be read in view of the specification, of which they are a part.' " Phillips, 415 F.3d at 1315 (quoting Markman, 52 F.3d at 979). Thus, the second step in claim construction is for the court "to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582.

FN4. As defined by 35 U.S.C. s. 112, the specification of a patent is technically the written description of the disclosed invention plus the claims. 35 U.S.C. s. 112 para. 2. However, as used widely by courts and practitioners, the term "specification" herein refers only to the written description of the invention, excluding the claims.

[12] Next to the claim language itself, the specification is the most relevant evidence to any construction analysis. "Usually it is dispositive; it is the single best guide to the meaning of a disputed term." Id. In addition to defining terms, the specification "teaches about the problems solved by the claimed invention, the way the claimed invention solves those problems, and the prior art that relates to the invention. These teachings provide valuable context for the meaning of the claim language." Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1554 (Fed.Cir.1997), *abrogated on other grounds,* Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed.Cir.1998) (en banc); *see also* Phillips, 415 F.3d at 1316 ("In light of the statutory directive that the inventor provide a 'full' and 'exact' description of the claimed invention, the specification necessarily informs the proper construction of the claims."); 5A-18 Donald S. Chisum, *Chisum on Patents* s. 18.03(2)(c) (2006).

[13] The third step in claim construction entails consideration of a patent's prosecution history. A patent's prosecution history consists of "the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." Vitronics, 90 F.3d at 1582. For example, during the application process, a patent examiner may require the applicant to limit the scope of his or her proposed claims so as not to include prior art within their ambit. An applicant may also limit the scope of his or her proposed claims in the process of distinguishing his or her invention over the prior art in order to obtain a patent. When an applicant surrenders or disclaims subject matter in this manner, the disclaimer becomes part of the prosecution history. If the application ultimately issues as a patent, the patent holder is bound by his or her prior disclaimers. Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed.Cir.1998) ("[E]xplicit statements made by a patent applicant during prosecution to distinguish a claimed invention over prior art may serve to narrow the scope of a claim."). However, the Federal Circuit has said that "for prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325-26 (Fed.Cir.2003) (footnote omitted).

[14] In the context of multiple continuation or continuation-in-part patents originating from the same parent patent, "the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation." Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed.Cir.1999). Thus, a claim in a continuation or a continuation-in-part patent may, in addition to being limited by its own prosecution history, be limited because of (1) the prosecution history of its parent patent, and/or (2) the prosecution history of a continuation or continuation-in-part patent from the same parent patent that has issued prior to the patent in question, so long as the patents contain the same claim limitation.

[15] [16] Although a patent's prosecution history is relevant in construing the patent claims, there is a distinction between construing the claims in light of their prosecution history and applying the doctrine of prosecution history estoppel.FN5 Courts consult the prosecution history of a patent during claim construction, while they apply the doctrine of prosecution history estoppel only during trial as a measure of preventing a patentee from improperly benefiting from the doctrine of equivalents. FN6 Altech Controls Corp. v. E.I.L. Instruments, Inc., 71 F.Supp.2d 677, 680 (S.D.Tex.1999) ("Prosecution history estoppel imposes a legal limitation on the application of the doctrine of equivalents in excluding from the range of equivalents any subject matter surrendered during the prosecution of the application for the patent ...."); *see also* Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1238 (Fed.Cir.2001) ("This court has previously stated that the doctrine of prosecution history estoppel is 'irrelevant' to the determination of literal claim scope.... [W]e recognized a 'clear line of distinction' between using prosecution history to construe disputed claim language, and applying the doctrine of prosecution history estoppel ...." (citing Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 862 (Fed.Cir.1991))). The Federal Circuit has cautioned district courts not to confuse "following the statements in the prosecution history in defining a claim term, [with] the doctrine of prosecution history estoppel, which limits expansion of the protection under the doctrine of equivalents." Spectrum, 164 F.3d at 1378 n. 2.

FN5. The doctrine of prosecution history estoppel "precludes a patent owner in an infringement suit from obtaining a construction of a claim that would in effect resurrect subject matter surrendered during the course of proceedings in the Patent and Trademark Office." 5A-18 Chisum, *supra,* s. 18.05; *see also* Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 564-65 (Fed.Cir.2000) (en banc) ("The logic of prosecution history estoppel is that the patentee, during prosecution, has created a record that fairly notifies the public that the patentee has surrendered the right to claim particular matter as within the reach of the patent."), *vacated & remanded on other grounds,* 535 U.S. 722, 122 S.Ct. 1831, 152 L.Ed.2d 944 (2002), *on remand,* 344 F.3d 1359 (Fed.Cir.2003) (en banc), *cert. denied,* 541 U.S. 988, 124 S.Ct. 2018, 158 L.Ed.2d 492 (2004); Pharmacia & Upjohn Co. v. Mylan Pharms., Inc., 170 F.3d 1373, 1376 (Fed.Cir.1999) ("Prosecution history estoppel precludes a patentee from obtaining under the doctrine of equivalents coverage of subject matter that has been relinquished during the prosecution of its patent application."). The actions by the patentee that may give rise to prosecution history estoppel include claim amendments and arguments made before the Patent Office. Festo, 234 F.3d at 564.

FN6. The doctrine of equivalents "allows a patent owner to hold as an infringement a product or process that does not [fall within] the literal terms of a patent's claim but performs substantially the same function in substantially the same way to obtain the same result as the claimed subject matter." 5A-18 Chisum, *supra,* s. 18.04 (footnote omitted). The doctrine is a response to the difficulties in capturing an invention with words. For a court only to conduct literal infringement analysis and confine an invention strictly to its written application may, in some instances, be unfair to the inventor. The Supreme Court observed in Festo that "the nature of language makes it impossible to capture the essence of a thing in a patent application.... [It] may not capture every nuance of the invention or describe with complete precision the range of its novelty." Festo, 535 U.S. at 731, 122 S.Ct. 1831.

[17] Lastly, although "[i]n most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term," a court may rely on extrinsic evidence, such as expert and inventor testimony, dictionaries, and learned treatises, if an analysis of the intrinsic evidence does not give clarity to a disputed claim term. Vitronics, 90 F.3d at 1583. Nevertheless, a court should not rely on extrinsic evidence when the public record unambiguously defines the scope of the claimed invention. "The claims, specification, and file history, rather than extrinsic evidence, constitute the public record ... on which the public is entitled to rely." Id.

[18] Notwithstanding the disfavored treatment of extrinsic evidence, Vitronics instructs that judges may consult technical treatises and dictionaries to gain a better understanding of the underlying technology. Id. at 1584 n. 6. Judges may even adopt the dictionary definition of terms as long as the definition does not contradict the intrinsic evidence associated with related patent documents. Id.

C. Construction of Means-Plus-Function Elements

In addition to the general principles of claim construction, special rules of construction apply to claims that employ so-called means-plus-function language. A means-plus-function claim element describes an invention, or an aspect of an invention, as a general means or step for performing a specifically-defined function. By employing means-plus-function claim language, a patentee may "recite a function to be performed as a claim limitation rather than reciting structure or materials for performing that function." Omega Eng'g, 334 F.3d at 1321. Section 112, paragraph six of Title 35 of the United States Code authorizes the use of means-plus-function terminology in claim drafting.

An 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 and equivalents thereof.

35 U.S.C s. 112 para. 6.

[19] [20] A court will construe claim limitations written in means-plus-function form by utilizing a two-step approach. The court must first identify the claimed function. Omega Eng'g, 334 F.3d at 1321. Ordinary principles of claim construction govern the identification of the claimed function and "[t]he court must construe the function of a means-plus-function limitation to include the limitations contained in the claim language, and only those limitations." Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 (Fed.Cir.2002). Under general principles of claim construction, there is "a 'heavy presumption' that claim terms carry their accustomed meaning in the relevant community at the relevant time," and this presumption may be overcome only "by clearly using the words in the specification, prosecution history, or both 'in a manner inconsistent with its ordinary meaning.' " Genzyme Corp. v. Transkaryotic Therapies, Inc., 346 F.3d 1094, 1098 (Fed.Cir.2003) (quoting CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002), and Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp., 320 F.3d 1339, 1347 (Fed.Cir.2003)). Therefore, under general principles of claim construction, the function of a means-plus-function claim is construed according to its "ordinary and accustomed meaning[ ] unless the patentee demonstrated an intent [in the intrinsic record] to deviate from the ordinary and accustomed meaning of a claim term ... using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324, 1327 (Fed.Cir.2002).

[21] [22] Once the court identifies the function, it must then determine the corresponding structure or structures in the specification that perform the identified function. Omega Eng'g, 334 F.3d at 1321; Med.

Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1210 (Fed.Cir.2003). A structure is corresponding "only if the specification or the prosecution history clearly links or associates that structure to the function recited in the claim." B. Braun Med., Inc. v. Abbott Labs., 124 F.3d 1419, 1424 (Fed.Cir.1997); *see also* Icon Health & Fitness, Inc. v. Sportcraft, Ltd., 272 F.Supp.2d 384, 388 (D.N.J.2003) ("Claim construction of a means-plus-function element requires identification of the function recited in the claim and identification of the structure corresponding to that function as disclosed in the specification."). Because a means-plus-function claim by definition may not recite structure, the Court looks first to the language of the specification to identify the corresponding structure. *See* B. Braun Med., 124 F.3d at 1424; *see also* Atmel Corp. v. Info. Storage Devices, 198 F.3d 1374, 1381 (Fed.Cir.1999) ("[S]tructure supporting a means-plus-function claim under s. 112, para. 6 must appear in the specification.").

[23] [24] If necessary, the Court may also consult the patent's prosecution history. *See* Cybor, 138 F.3d at 1457 ("Prosecution history is relevant to the construction of a claim written in means-plus-function form."). Just as a patentee may disavow the scope of his or her claims, in the case of claims involving means-plus-function language, he or she may disclaim a particular structure during prosecution. *See* Altiris Inc. v. Symantec Corp., 318 F.3d 1363, 1375 (Fed.Cir.2003); *cf.* Ballard Med. Prods. v. Allegiance Healthcare Corp., 268 F.3d 1352, 1359 (Fed.Cir.2001) ("When a patentee advises the examiner ... that a particular structure is not within his invention, the patentee is not permitted to assert in a subsequent infringement action that the same structure is equivalent ... for purposes of section 112 paragraph 6."); Cybor, 138 F.3d at 1457 ("Clear assertions made in support of patentability may thus affect the range of equivalents under s. 112, para. 6."). However, "[u]nless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage." York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1575 (Fed.Cir.1996).

[25] Although employment of means-plus-function language may seemingly grant the drafter all the means capable of performing the recited function, this is not the case. Within the framework for construing a means-plus-function clause, the statute limits a means-plus-function element to cover only "the corresponding structure, material or acts described in the specification and equivalents thereof." 35 U.S.C. s. 112 para. 6; *see also* Kahn v. Gen. Motors Corp., 135 F.3d 1472, 1476 (Fed.Cir.1998) ("[I]n writing a claim in means-plus-function form, a party is limited to the corresponding structure disclosed in the specification and its equivalents."). "The duty of a patentee to clearly link or associate structure with the claimed function is the quid pro quo for allowing the patentee to express the claim in terms of function under section 112, paragraph 6." Med. Instrumentation, 344 F.3d at 1211; *see also* Bailey v. Dart Container Corp., 157 F.Supp.2d 110, 115 (D.Mass.2001) ("[T]he 'cost' of using means-plus-function language is that the scope of the claim is restricted to the particular structures disclosed in the specification and their equivalents.").

III. Construction of the Disputed Claims

A. The '698 Patent

The parties dispute the interpretation of several elements in claims 1 and 2 of the '698 patent. In claim 1, they dispute the construction of the following elements: the "laser beam producing means" of limitation 1(a)(2)(i); the "laser light detecting means" of limitation 1(a)(2)(iii); the "bar code symbol detection means" of limitation 1(a)(3); the "symbol decoding means" of limitation 1(a)(4); the "housing support means" of limitation 1(b)(1); and the "base portion" of limitation 1(b)(2).

1. Limitation 1(a)(2)(i)

" *a laser beam producing means disposed in said hand-supportable housing for producing and projecting a laser beam through said light transmission aperture* "
[26] The Federal Circuit has delineated a framework for allowing courts to recognize when a claim drafter has properly invoked the strictures of 35 U.S.C. s. 112 para. 6. *See* Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d

1308, 1318 (Fed.Cir.1999). If the word "means" appears in the claim in combination with an intended function, a court will presume that the "means" clause is a means-plus-function element to which s. 112, para. 6 applies. Id. However, the drafter may overcome this presumption by reciting sufficient structure or material for performing the claimed function in the "means" clause, because s. 112, para. 6 governs only claim elements that do not recite structural or material limitations associated with the identified function. Id.

The parties agree that limitation 1(a)(2)(i) is a means-plus-function claim element. This Court has independently reviewed the claim language and concludes that, consistent with the foregoing principles,limitation 1(a)(2)(i) utilizes means-plus-function language. Specifically, the claim element recites the term "means" in connection with a function, thus giving rise to the presumption of a means-plus-function claim element. Furthermore, the claim element does not recite structure for performing the recited function so as to rebut the means-plus-function presumption. Accordingly, the Court will construe limitation 1(a)(2)(i) according to the principles governing means-plus-function claim elements under s. 112, para. 6.

Having found that limitation 1(a)(2)(i) is a means-plus-function claim element, the Court conducts a two-step analysis to construe this claim element properly. As mentioned above, the Court must first identify the function recited in the claim element. Omega Eng'g, 334 F.3d at 1321. Once the function is ascertained, the Court must determine the structure corresponding to that function as disclosed in the specification. Id.

a. Function

[27] [28] The parties appear substantially to agree that the claimed function is "producing and projecting a laser beam through said light transmission aperture." Although Symbol, unlike Metrologic, fails to set forth expressly its proposed construction of the disclosed function, Symbol appears not to contest Metrologic's straightforward reliance on the plain language of the claim. Under principles of claim construction for means-plus-function claims, "[t]he court must construe the function of a means-plus-function limitation to include the limitations contained in the claim language, and only those limitations." Cardiac Pacemakers, 296 F.3d at 1113. Here, limitation 1(a)(2)(i) expressly states that the laser beam producing means is for "producing and projecting a laser beam through said light transmission aperture." Accordingly, the Court finds that the recited function is "producing and projecting a laser beam through said light transmission aperture."

b. Corresponding Structure

i. Normally-Off Visible Laser Diode

[29] The parties have two disputes concerning the corresponding structure. While they agree that the visible laser diode 36 is a corresponding structure, they vigorously contest whether that visible laser diode is normally off. Symbol urges the Court to construe limitation 1(a)(2)(i) so as to expressly acknowledge the limitation that the visible laser diode is normally off. According to Symbol, the patentees of the '698 patent distinguished their invention by claiming that the normally-off laser was an improvement over prior art that wasted power by blinking the laser during object detection or powering the laser continuously. *See* '698 Patent col. 2 ll. 10-16, 27-44. Metrologic responds that in distinguishing their own invention over the prior art, the patentees were merely describing one problem that the prior art exhibited when implemented as portable, battery-powered devices. Thus, Metrologic accuses Symbol of seeking to import a limitation from the specification into the claims.

Metrologic is correct that the plain language of limitation 1(a)(2)(i) does not explicitly require a "normally-off" laser. As the Federal Circuit has mandated, however, courts interpreting means-plus-function claims must consult the specification when identifying the structure that corresponds to a given function. Omega Eng'g, 334 F.3d at 1321. Here, the specification clearly discloses a normally-off visible laser diode. First, the patentees denigrate the prior art by indicating that prior art devices suffer from "several significant

shortcomings and drawbacks," such as requiring the "continuous use of a pulsed laser beam" that "undesirably drains limited power reserves." ' 698 Patent col. 2 ll. 11, 13, 14-15. The claimed invention purports to "overcome[ ] the above shortcomings and drawbacks of prior art devices" in part by operating in a "power conserving manner." Id. col. 2 ll. 64-65, col. 3 ll 15-16; *see also* id. col. 5 ll. 27-29 (noting that the invention "provides a great degree of versatility in system capability and operation, as well as power conservation"). In conjunction with representations made elsewhere in the specification, these statements suggest that the patentees did not regard the difference between continuously-on and normally-off lasers as insubstantial. *See* Ballard Med. Prods., 268 F.3d at 1359 ("Statements detailing the shortcomings of the relevant prior art have often proved useful in construing means-plus-function claims."); *cf.* Vulcan Eng'g Co. v. Fata Aluminium, Inc., 278 F.3d 1366, 1374 (Fed.Cir.2002) (affirming district court's finding that differences between accused device and corresponding structure described in specification were insubstantial, and thus the devices were equivalent); *cf. also* 35 U.S.C. s. 112 para. 6 (extending means-plus-function claim coverage to include structure described in specification "and equivalents thereof").

Second, a normally-off visible laser diode is the only embodiment of the claimed function that is disclosed in the specification. *See* Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1308 (Fed.Cir.1998) (construing corresponding structure in reference to only disclosed preferred embodiment). The specification discloses that the scanning means includes the visible laser diode, '698 Patent col. 7 ll. 17-21, and that this scanning means is initially off, id. col. 5, ll. 52-57; col. 11 ll. 46-55. This disclosure finds confirmation in Figure 8A, block A, which indicates that during object detection, only the system activation means is on, while the "remainder of system components are off, i.e. scanning means...." Id. Fig. 8A.

Third, the "Background" section of the specification indicates that one of the objects of the invention is to "determin[e] the presence of an object without enabling the scanning means of the device." Id. col. 3 ll. 26-29. Another object of the invention is to provide a system in which "a wide number of system control operations can be carried out in a power conserving manner, to permit automatic reading of bar code symbols in a variety of diverse applications." Id. col. 3 ll. 14-17. The "versatility" and "power conservation ... advantages of this control system architecture" are reflected in the preferred embodiment. Id. col. 5 ll. 28-32. Together, these representations clearly indicate that the structure corresponding to the claimed function is a normally-off visible laser diode. *See* Honeywell Int'l, Inc. v. ITT Industries, Inc., 452 F.3d 1312, 1320 (Fed.Cir.2006) (holding that specification's repeated denigration of a particular embodiment was "the equivalent of a disavowal" of subject matter).

Metrologic contends that when the specification speaks of the shortcomings of prior art devices that drain limited power reserves, it refers specifically to battery-powered devices that are not relevant to the instant dispute. However, the desirability of power conservation is not limited to battery-powered devices. *See* '698 Patent col. 3 ll. 14-17 (listing desirability of power conservation without mentioning battery-powered applications). Nor does the patent confine its denigration of continuously-on prior art devices to the problem of power drain. For instance, in discussing the shortcomings inherent in the prior art, the patentees note that "the extensive use of a laser beam to perform object and bar code symbol detection functions implicates [the] necessity for laser emission control measures." Id. col. 2 ll. 43-46. Such statements belie Metrologic's contention that the patentees' denigration of continuously-on prior art devices "is not even relevant to the claim at issue." (Metrologic's Rebuttal Br. 5.)

[30] [31] Metrologic points to nothing in the patent indicating that battery-powered applications are not relevant to the claimed invention. Moreover, simply because the accused infringing devices are not battery-powered should not affect the Court's construction of the disputed claims. It is axiomatic that a patent's claims should have the same meaning to all people at all times. *See* Markman, 52 F.3d at 987. A corollary to this principle is that the meaning of a patent's claims does not depend on the nature of the alleged infringing device. *See* id. ("[T]he subjective meaning that a patentee may ascribe to claim language is also not determinative."). Here, the patent clearly signals the importance of power conservation and laser emission

control. Therefore, these qualities are relevant in this dispute.

Metrologic also argues, in supplemental briefing submitted to this Court, that Symbol's proposed construction impermissibly adds a functional limitation-"normally off"-in violation of the Federal Circuit's guidance in Wenger Manufacturing, 239 F.3d at 1233. Again, the Court disagrees with this characterization. The adjective "normally-off" modifies the noun "visible laser diode," which together represent a *structural limitation* on the visible laser diode, not a functional limitation. Construing the corresponding structure as requiring a "normally-off visible laser diode" in no way limits the function of "producing and projecting a laser beam through said light transmission aperture." Thus, for all of the reason discussed above, it is apparent that an important feature of the visible laser diode in the claimed invention is that it is normally off.

ii. Mirror for Projecting

The parties' second dispute concerns whether the corresponding structure includes a mirror, and if so, whether the mirror is the "scanning mirror." Metrologic argues that a mirror is necessary to perform the function of "projecting" the laser beam through the light transmission aperture. Symbol responds that, with respect to limitation 1(a)(2)(ii), which is not in dispute, the parties agree that the claimed "scanning means" includes "a scanning mirror." Thus, according to Symbol, Metrologic's insistence that a "mirror" be included in the structure corresponding to the laser beam producing means (limitation 1(a)(2)(i)) indicates that under Metrologic's proposed constructions, *two* mirrors could perform the functions of projecting and scanning the laser beam. Symbol contends that two mirrors are redundant, and that only one mirror-corresponding to the agreed-upon scanning mirror of the scanning means (limitation 1(a)(2)(ii))-is necessary to perform the projecting and scanning functions.

There is no dispute that at least one mirror is necessary to perform the function of "projecting" the laser beam through the light transmission aperture. The parties further agree, with respect to limitation 1(a)(2)(ii), that "a scanning mirror" performs the function of "scanning a laser beam across a scan field." (App. of Exs. to Symbol's Br., Ex. 8 at 1.) Thus, the Court must determine whether this agreed-upon construction is inconsistent with Metrologic's proposed construction of limitation 1(a)(2)(i) as including a "mirror" for projecting the laser beam.

[32] A structure is corresponding "only if the specification or the prosecution history clearly links or associates that structure to the function recited in the claim." B. Braun Med., 124 F.3d at 1424. Clearly, limitation 1(a)(2)(i) describes the function of "projecting." This function cannot be performed without the aid of a mirror. Thus, the '698 patent discloses in its specification that while the visible laser diode 36 is the light source, a mirror is used to deflect the laser beam output from the laser diode. '698 Patent col. 7 ll. 17-26. Although Metrologic's proposed construction of limitation 1(a)(2)(i) refers to a "mirror" in generic terms, Metrologic indicates in its opening brief that this mirror is in fact the scanning mirror of limitation 1(a)(2)(ii). (Metrologic's Opening Br. at 19 ("... the structure corresponding to the function of 'projecting' is the mirror attached to the scanning motor (38).").) The '698 patent shows that item 38 is indeed the scanning mirror. '698 Patent col. 7 ll. 26; Fig. 1C. From these facts, the Court concludes that as between limitations 1(a)(2)(i) and 1(a)(2)(ii), there is *one* mirror that performs both the functions of "projecting" the laser beam (limitation 1(a)(2)(i)) and "scanning" it across a scan field (limitation 1(a)(2)(ii)).

As worded, Metrologic's proposed construction of limitation 1(a)(1)(i) as including a "mirror" is ambiguous and admits of the possibility of two mirrors performing the projecting and scanning functions. Because the parties agree that limitation 1(a)(2)(ii) includes "a scanning mirror," and because there is only one mirror that performs the functions of projecting and scanning, the Court will construe limitation 1(a)(2)(i) to include the additional corresponding structure of a "scanning mirror." In this way, the Court ensures the identity of the mirrors corresponding to limitations 1(a)(2)(i) and 1(a)(2)(ii).

For the foregoing reasons, the Court finds that the structure corresponding to the function described in limitation 1(a)(2)(i) is a normally-off visible laser diode and scanning mirror. The Court shall construe limitation 1(a)(2)(i) as follows: "a normally-off visible laser diode and scanning mirror and their structural equivalents for producing and projecting a laser beam through a light transmission aperture when activated."

2. Limitation 1(a)(2)(iii)

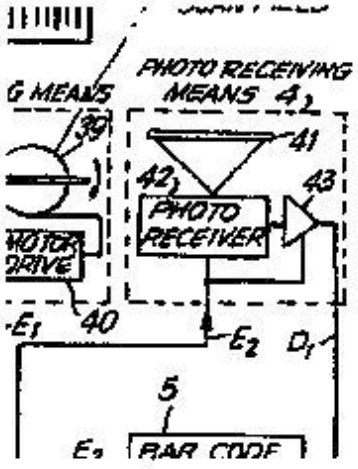
" *laser light detecting means for detecting the intensity of laser light reflected off said scanned bar code symbol and passed through said light transmission aperture, and automatically producing scan data indicative of said detected light intensity;* "
[33] The parties agree that limitation 1(a)(2)(iii) is a means-plus-function claim element. Having independently reviewed the claim language, the Court finds that the language employs the term "means" and does not recite any structure for performing the claimed function. In accordance with Federal Circuit guidance, the Court concludes that limitation 1(a)(2)(iii) is a means-plus-function claim element.

a. Function

Both parties essentially agree that the function recited in limitation 1(a)(2)(iii) is "detecting the intensity of laser light reflected off of a bar code symbol and [ ] automatically producing scan data indicative of the detected light intensity." (Metrologic's Br. 20; *see also* Symbol's Br. 8 (characterizing the function as "detecting and producing").) This construction comports with the plain language of the claim. Therefore, the Court finds that the function recited by limitation 1(a)(2)(iii) is "detecting the intensity of laser light reflected off of a bar code symbol and automatically producing scan data indicative of the detected light intensity."

b. Corresponding Structure

Both parties agree that a photoreceiver is required to carry out the first part of the function of "detecting the intensity of laser light reflected off of a bar code symbol." The only controversy here is whether an additional preamplifier is needed to perform the function of "automatically producing scan data indicative of the detected light intensity." Metrologic contends that one is needed. Symbol, by contrast, maintains that the function of "automatically producing scan data indicative of the detected light intensity" can be performed by the photoreceiver alone.



Photoreceiving Means of Figure 2

Photoreceiving Means of Figure 2

This dispute essentially centers on the proper meaning of the term "scan data indicative of the detected light intensity." Because the proper meaning is not apparent from the plain language of the claims, the Court must consult the specification for a definition. Vitronics, 90 F.3d at 1582. The specification clearly indicates that upon detecting reflected laser light, the "photo receiving means 4 produces an analog data signal D_1." '698 Patent col. 7 ll. 47-48. Photoreceiving means 4 is defined to include, *inter alia,* a photoreceiver and a preamplifier. Id. col. 7 ll. 48-55; Fig. 2. Although the specification teaches that "an analog signal indicative of the intensity of the scan data signal" passes from the photoreceiver to the preamplifier, id. col. 7 ll. 52-54, the patent does not define this signal as itself being "scan data." Rather, the specification teaches only that this unnamed signal is " *indicative* of ... *the scan data signal*." Id. (emphasis added).

The significance of this distinction is apparent. As noted above, limitation 1(a)(2)(iii) claims the function of producing "*scan data* indicative of the detected light intensity." Thus, to perform the given function, it is necessary that a signal properly defined by the patent as "scan data" be produced. The only signal produced by any component of photoreceiving means 4 that the specification expressly defines as "scan data" is "analog scan data signal D_1." Id. col. 7 l. 55. As noted above, this signal is generated by photoreceiving means 4, which includes both the photoreceiver and the preamplifier. It therefore follows that the structure that corresponds to the function of "automatically producing scan data indicative of the detected light intensity" is a photoreceiver working in tandem with a preamplifier.FN7

FN7. As will be discussed below, all three patents-in-suit involve a similar dispute with regard to whether a preamplifier is needed in the laser light detecting means. Since all three patents-in-suit originated from the same parent application and share similar disclosures, particularly with respect to the laser light detecting means, the Court will accord a consistent construction of the laser light detecting means for all three patents-in-suit. The parties agree on this point. (*See* Metrologic's Answers to Supplemental Questions 5; *Markman* Hr'g Tr. 95:18-96:6.)

For the above reasons, the Court finds that the corresponding structure is a photoreceiver and a preamplifier. The Court also finds that limitation 1(a)(2)(iii) shall be construed as follows: "a photoreceiver and a preamplifier and their structural equivalents for detecting the intensity of laser light reflected off of a bar code symbol and automatically producing scan data indicative of the detected light intensity."

3. Limitation 1(a)(3)

" *bar code symbol detection means in said hand-supportable housing, for processing produced scan data so as to detect said scanned bar code symbol and automatically generate activation control signal in response to the detection of said scanned bar code symbol;* "
The parties agree that limitation 1(a)(3) is a means-plus-function claim element. Having independently reviewed the claim language, the Court finds that the language employs the term "means" and does not recite any structure. Thus, the Court concludes that limitation 1(a)(3) is a means-plus-function claim element.

a. Function

Metrologic suggests that the claim element discloses the functions of (1) "processing produced scan data so as to detect said scanned bar code symbol" and (2) "automatically generat[ing an] activation control signal in response to the detection of said scanned bar code symbol." (Metrologic's Br. 21 (alteration in original).)

Symbol does not appear to contest this interpretation. The Court notes that Metrologic's proposed construction converts the verb "generate" into its present participle "generating," thereby altering the meaning of the claim to suggest that the "processing" function serves only to "detect said scanned bar code symbol." This distorted meaning, however, vanishes from Metrologic's proposed interpretation of the claim. (*See id*. ("... so as to detect a scanned bar code symbol and automatically generate an activation control signal ...").) The Court will adhere to the plain language of the claim, and construe the claimed function as "processing produced scan data so as to detect said scanned bar code symbol and automatically generate an activation control signal in response to the detection of said scanned bar code symbol."

b. Corresponding Structure

The parties generally agree that the structure corresponding to the above function is represented by block 5 in Figure 2, which in turn represents the structure depicted in Figure 4. They also appear to agree that this structure produces an activation control signal in response to either analog or digital input, and that the activation control signal in turn serves as input to various "control means," which either start internal timers or perform logical operations. However, the parties disagree as to the precise nature of the structure depicted in Figure 4, and whether this structure may exist separate and apart from the "symbol decoding means" depicted in block 7 of Figure 2. Metrologic contends that Figure 4 is a block functional diagram for determining the presence of a bar code symbol, and that this diagram may be implemented as an electrical circuit that receives analog or digital input. In the case of digital input, Metrologic contends that the electrical circuit may be a programmable microprocessor.

By contrast, Symbol characterizes Figure 4 as depicting a "discrete circuit" that must exist "separate and apart" from the symbol decoding means depicted as block 7 in Figure 2. To support its insistence that the bar code presence detection means 5 and the symbol decoding means 7 are separate structures, Symbol argues, first, that they are depicted as being separate in the patent's only disclosed embodiment, and second, that Metrologic assured the patent examiner of this separateness when prosecuting the '698 patent's great-grandparent patent, U.S. Patent No. 5,424,525 ("the '525 patent"). Symbol urges this Court to find, therefore, that Metrologic has disclaimed any embodiment in which the bar code presence detection means 5 and the symbol decoding means 7 are not separate.

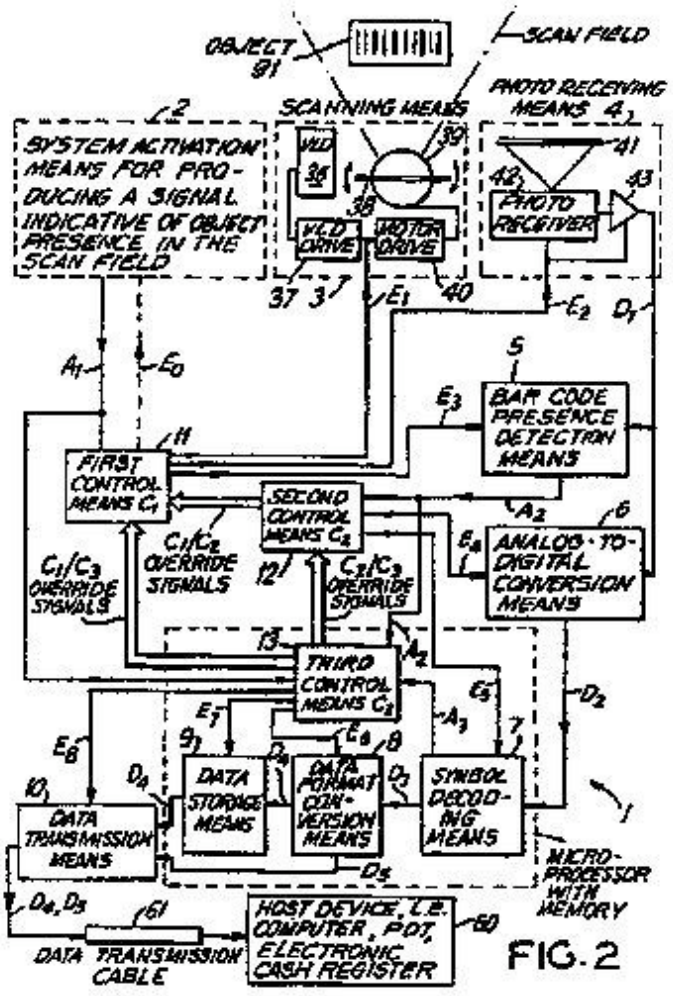


FIG. 2

FIG. 2

FIG. 4

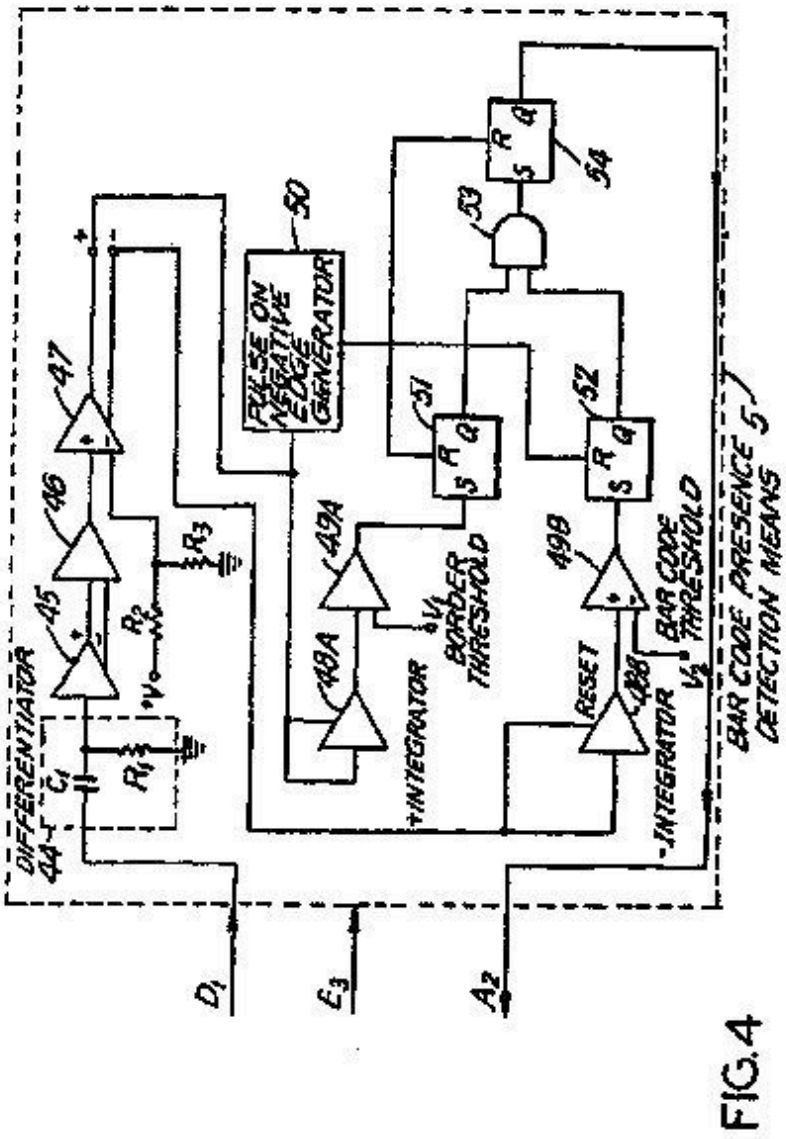


FIG. 4

Turning first to Figure 4, the Court finds that this pictorial depicts "a block functional diagram of the bar code presence detection means," '698 Patent col. 4 ll. 54-55, and not a "discrete circuit," as Symbol contends. Nevertheless, the parties appear to agree that this diagram could be implemented as an electrical circuit. The question remains whether such an electrical circuit could further be implemented as a programmable microprocessor, and whether it must exist separate and apart from the symbol decoding means.

[34] With respect to the question whether a programmable microprocessor is a structural equivalent of an electrical circuit, the Court need not decide this dispute at this time. Equivalence in the context of a means-plus-function claim is a question of fact, to be decided by the jury. Utah Med. Prods., Inc. v. Graphic Controls Corp., 350 F.3d 1376, 1383 (Fed.Cir.2003). Therefore, the Court declines, in construing this claim element, to find that a programmable microprocessor is a structural equivalent to an electrical circuit

implementing the block functional diagram of Figure 4.

[35] With respect to Symbol's contention that the '698 patent's only disclosed embodiment depicts the bar code detection means and the symbol decoding means as separate components, and that this depiction in turn represents a structural limitation on the claimed invention, the Court disagrees. To be sure, Figure 2 does depict the symbol decoding means as residing within a larger, dotted box representing a "microprocessor with memory," while the bar code presence detection means 5 appears to exist outside of the microprocessor. However, there is no support in the language of the specification for the notion that the bar code presence detection means *must* exist separate and apart from the symbol decoding means, or that important objects of the invention are achieved only through such separateness. The diagram is merely an illustration of the embodiment disclosed in the specification, and does not represent the limits of the claimed invention. This Court will not import a limitation based solely on its interpretation of a diagram. *See* Liquid Dynamics Corp. v. Vaughan Co., 355 F.3d 1361, 1369 (Fed.Cir.2004) (reversing district court for relying on written descriptions of figures to import a limitation into claim); Johnson Worldwide, 175 F.3d at 992 ("[M]ere inferences drawn from the description of an embodiment of the invention cannot serve to limit claim terms....").FN8

FN8. That the patent discloses several embodiments in which the activation control signal generated by the bar code presence detection means 5 is used to turn on the decode microprocessor does not, without more, imply that separate bar code presence detection means and symbol decoding means are a *sine qua non*.

[36] Perhaps recognizing that the specification provides scant support for its proposed interpretation, Symbol finds refuge in the prosecution history of the '525 patent. Specifically, Symbol urges the Court, based on statements Metrologic made during the prosecution of the '525 patent, to apply the doctrines of estoppel by argument FN9 and prosecution history estoppel to preclude Metrologic from now seeking a construction in which the programmed microprocessor of the symbol decoding means, *see* '698 Pat. Fig. 7A, may be utilized by the bar code presence detection means. As discussed above, the doctrine of prosecution history estoppel is relevant only during the second phase of the patent infringement analysis, i.e., the trial. *See* Biodex, 946 F.2d at 862. It follows that, being a subset of the doctrine of prosecution history estoppel, the doctrine of estoppel by argument is also relevant only during the trial. Therefore, the Court will not apply these doctrines at this time. However, recognizing the relevance of a patent's prosecution history during claim construction, the Court will conduct a similar analysis as it would under the doctrine of prosecution history estoppel.

FN9. The Federal Circuit in Festo used the doctrine of estoppel by argument to illustrate the circumstances under which the doctrine of prosecution history estoppel would apply. Festo, 234 F.3d at 568 ("Arguments made voluntarily during prosecution may give rise to prosecution history estoppel if they evidence a surrender of subject matter."). Thus, this Court regards the doctrine of estoppel by argument as merely a subset of the doctrine of prosecution history estoppel.

[37] [38] When considering a patent's prosecution history, the prosecution histories of other patents in that patent's family are relevant to the extent that all of the patents share the same disclosure and contain common subject matter. When construing similar claims from a family of patents, prosecution histories of related patents are relevant to claims with the same claim limitations. *See* Elkay Mfg., 192 F.3d at 980 ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation."). Thus, the prosecution history of a claim contained within an ancestor patent will not be relevant to the construction of a claim in a child patent when those claims have differing limitations. By comparison, differences in limitations among independent claims and their dependent claims

in a single patent *must* exist under the doctrine of claim differentiation, which "requires each claim be distinct from the others such that the limitations of a dependent claim should not be read into an independent claim." Cleanox Envtl. Servs., Inc. v. Hudson Envtl. Servs., Inc., 14 F.Supp.2d 601, 616 (D.N.J.1998).

[39] The relevant claims from the '525 great-grandparent patent are pending claim 69 and pending claim 96, which read as follows:

[Claim 69-]bar code symbol detection means for processing produced scan data, when activated, so as to detect said bar code symbol on said detected object, and automatically generating a second activation control signal in response to the detection of said bar code symbol;

....

[Claim 96-]A bar code symbol detection circuit for processing produced scan data in response to the generation of said first activation signal, so as to detect said bar code symbol on said detected object and automatically generate a second activation signal in response to the detection of said bar code symbol.

(App. of Exs. to Symbol's Br., Ex. 12 at 2, 12.) Symbol cites correspondence between Metrologic and the patent examiner for the '525 patent in which Metrologic represented that the microprocessor used for "bar code symbol reading" need be activated "only when" the device had previously detected a bar code. (Id. at 19 (emphasis in original).) Metrologic also distinguished its invention over prior art (U.S. Patent Nos. 4,639,606 ("Boles") and 4,933,538 ("Heiman")), which, according to Metrologic, required their decoding microprocessors to be activated before bar code symbol detection. From these representations, Symbol concludes that Metrologic limited its invention to a device that can detect a bar code symbol while the decoding microprocessor is off, thus implying that bar code symbol detection and decoding cannot be performed by the same microprocessor. Because the '698 patent derives from the '525 patent, and the language of pending claims 69 and 96 are "virtually identical" to the language of claim 1 of the '698 patent, Symbol maintains that the bar code symbol detection means of the ' 698 patent is subject to the same limitation.

Pending claim 96 of the '525 patent claimed a bar code symbol detection circuit similar to dependent claim 3 of the '698 patent, which claims the bar code symbol detection means of independent claim limitation1(a)(3) as a bar code detection circuit. Likewise, pending claim 69 of the '525 patent and independent claim limitation 1(a)(3) of the '698 patent both claim similar bar code symbol detection means. Under the doctrine of claim differentiation, independent claim limitation 1(a)(3) must be interpreted to have a broader scope than dependent claim 3. *See* Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed.Cir.1991). Thus, the bar code detection means cannot be narrowly construed to refer only to a bar code symbol detection circuit. Analogously, pending claim 96 of the '525 patent, which is similar to dependent claim 3 of the '698 parent, is narrower than independent claim limitation 1(a)(3) of the '698 patent.

In light of the foregoing, the relevant comparison is between pending claim 69 of the '525 patent and independent claim limitation 1(a)(3) of the '698 patent. While these claims appear superficially similar, they present several noteworthy differences. First, pending claim 69 contains a limitation requiring the bar code symbol detection means to be initially activated. (App. of Exs. to Symbol's Br., Ex. 12 at 2 ("... bar code symbol detection means for processing produced scan data, *when activated* ..." (emphasis added)).) This limitation does not appear in claim limitation 1(a)(3) of the '698 patent. Although it could be argued that the additional requirement of first being activated is implied in claim limitation 1(a)(3), the Court declines to draw such an inference without a clear mandate to do so. The law dictates that a claim should not be narrowed unless the prosecution history evidences a *clear disavowal* of the claim scope. York Prods., 99 F.3d at 1575.

Second, pending claim 69 and limitation 1(a)(3) contain different grammatical usages of the verb "generate." The result, as alluded to above, is to change the claimed function. *Compare* Pending Claim 69 ("bar code symbol detection means for processing ... and automatically generating ..."), *with* Limitation 1(a)(3) (means for processing "so as to detect ... and automatically generate ..."). In one claim, "processing" is grouped with "generating"; in the other, "detect" is grouped with "generate." Because this Court must maintain faithful adherence to the plain language of the claimed function, Cardiac Pacemakers, 296 F.3d at 1113, the Court must conclude that pending claim 69 and limitation 1(a)(3) have different claim scopes.

Thus, while Symbol advances a compelling argument, the Court ultimately finds that Symbol has failed to demonstrate that Metrologic's allegedly disavowing statements made during prosecution of the '525 patent constitute a clear disavowal of claim scope with respect to the bar code symbol detection means of the subsequently-issued '698 patent. York Prods., 99 F.3d at 1575.

Finally, Symbol urges this Court to construe limitation 1(a)(3) so as to require that the activation control signal is generated when the bar code symbol detection means determines that a bar code symbol *may* be present in the scan field, and not when a bar code symbol definitely *is* present. The Court has examined those portions of the specification to which Symbol has cited and finds little support for Symbol's argument. *A fortiori,* the Court remains unconvinced by the extrinsic evidence that Symbol cites, namely, the deposition testimony of Jay M. Eastman, Metrologic's general technology expert, in which Dr. Eastman opined that it was hypothetically possible for the claimed device to "detect" a partial or incomplete bar code symbol. Ultimately, the Court finds that Metrologic's proposed construction hews more closely to the plain language of the claim and the specification than does Symbol's proposed construction. *See* Phillips, 415 F.3d at 1316 ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." (quoting Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed.Cir.1998))).

Accordingly, for all of the reasons discussed above, the Court finds that limitation 1(a)(3) shall be construed as follows: "an analog or digital circuit and structural equivalents, for processing produced analog or digital scan data so as to detect a scanned bar code symbol and automatically generate an activation control signal in response to the detection of said scanned bar code symbol."

4. Limitation 1(a)(4)

" *symbol decoding means in said hand-supportable housing, and responsive to said activation control signal, for processing produced scan data so as to read said detected bar code symbol, and automatically produce symbol character data representative of said read bar code symbol;* "
[40] The parties agree that limitation 1(a)(4) is a means-plus-function claim element. Having independently reviewed the claim language, the Court finds that the language employs the term "means" and does not recite any structure. Accordingly, the Court concludes that limitation 1(a)(4) is a means-plus-function claim element.

a. Function

Metrologic suggests that limitation 1(a)(4) discloses the dual functions of "processing produced scan data so as to read the detected bar code symbol" and "automatically producing symbol character data representative of the read bar code symbol." (Metrologic's Br. 23.) According to Metrologic, the terms "scan data" and "activation control signal" should mean the same as they do for the bar code detection means, whereas the term "symbol character data" should mean a signal corresponding " 'to the decoded bar code symbol.' " (*Id.* 24 (quoting ' 698 Patent col. 4 ll. 10-11).) Metrologic leaves the term "read" undefined, however, and simply imports that term into its proposed construction. By comparison, Symbol's proposed construction abandons

the term "read" and instead interprets the symbol decoding means as serving to "receive scan data and decode the scan data." (Symbol's Br. 12.)

In the background section of the specification, the patentees equate reading with "recognition." '698 Patent col. 1 ll 18-19 ("The present invention relates generally to automatic bar code symbol reading (i.e. recognition) systems...."). While the patent does not explicitly define the term "recognition," the summary of the invention suggests that reading (i.e., recognition) carries a comparatively broad meaning that encompasses multiple functions of the invention. *See* id. col. 3 ll. 55-58 ("In general, the automatic bar code reading device comprises system activation means, scanning means, photoreceiving means, analog-to-digital conversion means, bar code presence detection means, and symbol decoding means."). Within limitation 1(a)(4), however, reading appears to be a subset of decoding. *See* '698 Patent col. 15 ll. 35-40 (claiming function of the decoding means to be the "processing" of scan data, and claiming "processing" to entail "read[ing]" and "produc[ing]"). This apparent ambiguity and the absence of any clarifying definition in the specification suggest that the term "read" and its variations may have different meanings, depending on their context. Given that Symbol does not explicitly contest Metrologic's use of the term "read" in its proposed construction, the Court concludes that the precise definition of the term "read" as used in limitation 1(a)(4) does not present a material dispute. Accordingly, the Court will adopt Metrologic's proposed interpretation of the function performed by the symbol decoding means. The symbol decoding means of limitation 1(a)(4) performs the function of "processing produced scan data so as to read the detected bar code symbol, and automatically produce symbol character data representative of the read bar code symbol."

b. Corresponding Structure

The parties agree that the corresponding structure for performing the recited function is a programmable microprocessor. (Metrologic's Br. 24; Symbol's Br. 12.) However, Symbol urges the Court to recognize three limitations on this structure. First, Symbol contends that for the reasons discussed in the context of limitation 1(a)(3), Metrologic, when prosecuting the '525 patent, surrendered any interpretation in which the decoding microprocessor was not "separate and apart" from the bar code symbol detection means. Second, Symbol argues that the activation control signal, to which the symbol decoding means is "responsive," must originate from the bar code symbol detection means. Finally, Symbol faults Metrologic for failing to address how the decoding microprocessor is "responsive" to the activation control signal.

The Court rejects Symbol's first argument for precisely the reasons it rejected this argument for limitation 1(a)(3). Specifically, the Court does not find a clear mandate in the claim or specification language for the notion that the bar code presence detection means must exist separate and apart from the symbol decoding means, or that important objects of the invention are achieved only through such separateness. Nor does the Court find within the prosecution history of the '525 patent a clear disavowal of all embodiments in which the bar code presence detection means and the symbol decoding means could be implemented by the same microprocessor. Accordingly, the Court rejects Symbol's proposed limitation that the decoding microprocessor is "not used during bar code detection." (Symbol's Br. 12.)

[41] With respect to Symbol's second argument, Symbol objects to Metrologic's suggestion that the decoding microprocessor is responsive to " *an* activation control signal." (Metrologic's Br. 23 (emphasis added).) Symbol notes that the claim language requires the symbol decoding means to be " *responsive* to *said* activation control signal" (Symbol's Br. 13 (emphasis in original)), meaning the activation control signal generated by the bar code symbol detection means in response to the detection of a bar code symbol. Symbol is correct. The plain language of limitation 1(a)(4) states that the symbol decoding means is "responsive to said activation control signal." ' 698 Patent col. 15 ll. 36-37. "[S]aid activation control signal" clearly refers to the activation control signal generated by the bar code symbol detection means of limitation 1(a)(3) "in response to the detection of said bar code symbol." Id. col. 15 ll. 32-34. Thus, the particular activation control signal in question is the activation control signal that indicates that a bar code symbol is

present.

Finally, Symbol urges the Court to define the term "responsive," as used in limitation 1(a)(4), to mean "turned on in response." Symbol bases this argument on Metrologic's only disclosed embodiment, in which Symbol contends that an initially-off decoding microprocessor is turned on in response to the pertinent activation control signal (labeled as A_2). This signal serves as input to a component of the microprocessor known as the third control means, which, according to Metrologic, is always "operating and waiting to receive" signal A_2. Thus, Metrologic rejects Symbol's interpretation and maintains that because the third control means is "operating," the microprocessor is not initially off.

In numerous places, the specification describes an embodiment in which the microprocessor is initially off. For instance, Metrologic discloses a preferred embodiment in which, "[w]hen power switch is initially engaged to its ON position, power will only be provided to system activation means 2 to enable its operation, while, for example, only biasing voltages and the like are provided to all other system components so that they are each initially disabled from operation." '698 Patent col. 5 ll. 52-57. In response to the detection of a bar code in the scan field, activation control signal A_2 "activates second control activation means 12, which, in turn, directly enables A/D conversion means 6 and *symbol decoding means 7*." Id. col. 9 ll. 26-28 (emphasis added). Likewise, Metrologic discloses that when the preferred embodiment is turned on and the system activation means enabled (i.e., turned on), "the remainder of the systems components (i.e., scanning means 3, photoreceiving means 4, A/D conversion means 6, bar code detection means 5, *symbol decoding means 7,* data format conversion means 8, data storage means 9 and data transmission means 10), [are] disabled (i.e., OFF)." Id. col. 11 ll. 50-54 (emphasis added); *see also* id. col. 13 ll. 13-17 ("[W]hen bar code symbol reading device is turned ON, only system activation means 2 is operative and all other system components are inoperative."). The symbol decoding means 7 is enabled in response to signal A_2. Id. col. 11 l. 64-col. 12 l. 2. Figure 8A also clearly indicates that initially, "system activation means is **on** [and] remainder of system components are **off,** i.e. scanning means, photoreceiving means, A/D conversion means, barcode detection means, *symbol decoding means,* data format conversion and transmission means are **off.**" Id. Fig. 8A (bold in original; italics added).

In the face of these repeated statements to the contrary, the Court finds no support for Metrologic's assertion that the third control means is always "operating." (Metrologic's Br. 14.) The only citation to the specification that Metrologic provides for this proposition simply describes how the third control means operates after it has been enabled. *See* '698 Patent col. 12 l. 49-col. 13 l. 4 (describing operations occurring after block G of Figure 8B, where symbol decoding means 7 has previously been enabled at block E of Systems-Control Operation No. 1, depicted in Figure 8A). Elsewhere in the specification, Metrologic discloses that all system components other than system activation means initially receive only "biasing voltages and the like" and are therefore "each initially disabled from operation." Id. col. 5 ll. 55-57. Thus, even if the third control means is always "operating and waiting" under the influence of a biasing voltage, the specification clearly indicates that the third control means is still "disabled from operation." Id.

As noted in the discussion of the laser beam producing means, one of the stated objects of this invention is power conservation. The specification makes clear that this object is served not only by employing an initially-off visible laser diode, but also by utilizing a system architecture in which "one or more of the control centers are capable of overriding certain of the other control centers so that a wide number of system-control operations can be carried out in a power conserving manner, to permit automatic reading of bar code symbols in a variety of diverse applications." Id. col. 3 ll. 12-17. This programmable control system "provides a great degree of versatility in system capability and operation, as well as power conservation." Id. col. 5 ll. 28-29. In light of this stated objective, the Court finds that the disclosure of an initially-off microprocessor is not merely one possible embodiment, but an embodiment that serves an important objective of the invention. *See* Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1380

(Fed.Cir.2001) ("The summary and objects of the invention ... must be read, if possible, in a manner consistent with the rest of the written description.").

In summary, the specification clearly and unambiguously teaches, in its only disclosed embodiment, that the decoding microprocessor is initially off. This feature of the invention serves the important objective of power conservation. Because claims "must be read in view of the specification, of which they are a part," the Court will construe the symbol decoding means of limitation 1(a)(4) to reflect the patentees' clearly-expressed intention of an initially-off microprocessor. Markman, 52 F.3d at 979; *see also* Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1370 (Fed.Cir.2003) ("[W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims."); Bailey, 157 F.Supp.2d at 115 ("[T]he 'cost' of using means-plus-function language is that the scope of the claim is restricted to the particular structures disclosed in the specification and their equivalents.").

For the reasons discussed, the Court construes the symbol decoding means of limitation 1(a)(4) as follows: "a programmable microprocessor and structural equivalents and which is turned on in response to an activation control signal indicating that a bar code symbol is present, for processing produced scan data so as to read the detected bar code symbol, and automatically produce symbol character data representative of the read bar code symbol."

5. Limitation 1(b)(1)

" *(b) a scanner stand including*
(1) housing support means for receiving and supporting at least a portion of said hand-supportable housing
"

[42] The parties agree that limitation 1(b)(1) is a means-plus-function claim element. This independent claim limitation employs the term "means," which creates the presumption of a means-plus-function claim. Furthermore, as used in this context, the term "housing support" serves as an adjective and does not recite structure. Hence, the Court concludes that limitation 1(b)(1) is a means-plus-function claim element.

a. Function

The parties do not genuinely dispute the interpretation of limitation (b), but do disagree as to the proper interpretation of sub-limitation (b)(1). Adhering closely to the plain language of the claim, Metrologic suggests that the function is "receiving and supporting at least a portion of the hand-supportable housing." Symbol re-casts the function as "receiving the handle of the reader." Symbol's proposed interpretation is clearly wrong, as the claim language requires only that the housing support means receive and support "at least a portion" of the housing, and not "the handle of the reader." Because "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction," Phillips, 415 F.3d at 1316, the Court finds that the function recited by limitation 1(b)(1) is "receiving and supporting at least a portion of the hand-supportable housing."

b. Corresponding Structure

The parties' chief dispute concerns the corresponding structure. Metrologic contendsthat the corresponding structure is "a support structure," an example of which is the support stand shown in Figure 10 of the '698 patent. In that embodiment, the support stand contains a receptacle for holding the hand-held scanner device, and a person of ordinary skill in the art would understand that the support stand would support the hand-held scanner device so as to permit it to project its scan field over a portion of the countertop. (Metrologic's Br. 24.)

FIG. 10

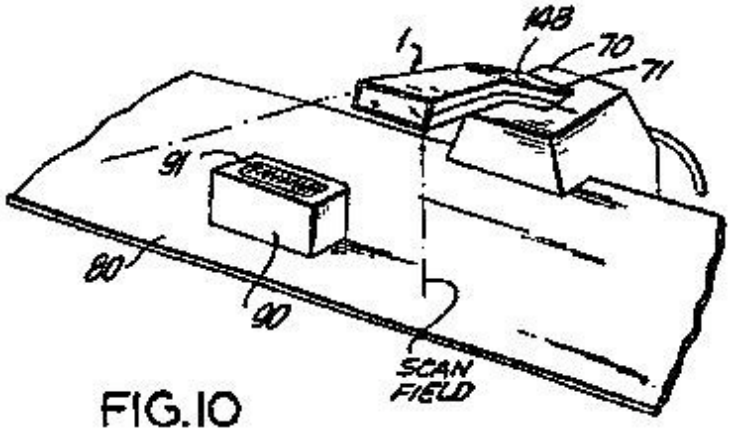


FIG.10

Symbol contends that the only structure disclosed in the patent is the receptacle 71, depicted in Figure 10, which (1) receives the handle of the hand-held scanner device and (2) prevents the laser beam from being downwardly directed. (Symbol's Br. 14.) These additional limitations, Symbol argues, flow from representations that Metrologic made during the prosecution of the ' 698 patent's grandparent patent, U.S. Patent No. 5,591,953 (the '953 patent). During that prosecution, Metrologic purportedly distinguished over downwardly-pointing prior art stands when it represented that its invention entailed a scan field that "is projected *away from the scanner support stand and the hand-supportable housing, and extends above the countertop surface*." (App. of Exs. to Symbol's Br., Ex. 15 at 8 (underline in original).) Metrologic also referred to an "outwardly projected scan field" (id.,) and represented that "said scan field is projected away from said scanner support stand and said hand-supportable housing, and extends above said countertop surface permitting the automatic reading of bar code symbols on objects passed by said scanner support stand" (id. at 3-4).

[43] The Court first consults the claim language and specification. Vitronics, 90 F.3d at 1582. Limitation 1(b)(1) clearly states that the housing support means serves the function of receiving "at least a portion" of the hand-held scanner device. '698 Patent col. 15 l. 52. Symbol simply ignores this language in arguing that the receptacle may receive only the handle of the hand-held scanner device. This Court must "give full effect to the ordinary and accustomed meaning of claim terms." Johnson Worldwide, 175 F.3d at 989. Although Symbol is correct that the preferred embodiment depicted in Figure 10 and described in column 14 of the specification discloses a receptacle 71 that receives the handle of a hand-held scanner device, '698 Patent col. 14 ll. 51-52; Fig. 10, the Court may not import limitations from the preferred embodiment that are contradicted by the language of the claims. JVW Enters., Inc. v. Interact Accessories, Inc., 424 F.3d 1324, 1335 (Fed.Cir.2005). Nor is this a case where Metrologic, through repeated statements in the specification, has clearly signaled that "the claimed invention is narrower than the claim language might imply," Alloc, 342 F.3d at 1370, or that " 'the patentee ... intends for the claims and the embodiments in the specification to be strictly coextensive,' " JVW Enters., 424 F.3d at 1335 (quoting Phillips, 415 F.3d at 1323). Therefore, in the face of clear language in the patent itself refuting Symbol's proposed handle limitation, the Court need not consult the prosecution history of the '953 patent. *See* Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir.1998) (advising courts to consult prosecution history "if relevant"); Vitronics, 90 F.3d at 1582 (noting that court "may" consider prosecution history); Markman, 52 F.3d at 980 (explaining that prosecution history may not be used to "enlarge, diminish, or vary the limitations in the claims" (internal quotation marks omitted)). The claimed housing support means shall not

be limited to receiving only the handle of the hand-supportable housing.

[44] With respect to Symbol's proposed limitation on downwardly-directed laser beams, the Court finds no basis in the claim or specification for concluding that the laser beam may or may not be downwardly-directed. The specification discloses an embodiment in which the receptacle 71 receives the housing handle portion of the hand-held scanner device so as to cast the scan field "over a counter top." '698 Patent col. 14 l. 53-54. This language, in the Court's view, does not suggest that the laser beam may not be downwardly-directed.FN10 Moreover, both parties cite to Figure 10 in support of their competing constructions (*see* Metrologic's Rebuttal Br. 16-17; Symbol's Br. 14-15), thus making evident the ambiguity of that graphic. Even if Figure 10 were not ambiguous, the Court may not limit claim terms based on inferences drawn from a disclosed embodiment. *See* Johnson Worldwide, 175 F.3d at 992.

FN10. For instance, the expression "the sun shines over the land" illustrates how the term "over" can be used to indicate an action that is downwardly-directed. *See Webster's Third New International Dictionary* 1605 (1993) (defining "over" to mean "4a(1): upon or down upon so as to rest, cover, or conceal from view"; "4a(2): upon or down upon so as to change or otherwise influence in a pervasive manner"); *see also Webster's Ninth New Collegiate Dictionary* 839 (1991) (defining "over" as "4a-used as a function word to indicate position upon or movement down upon <laid a blanket ~ the child> <hit him ~ the head>").

The statements that Symbol identifies in the prosecution history of '953 grandparent patent are similarly ambiguous and do not evince a clear disavowal of a downwardly-directed laser beam. *See* York Prods., 99 F.3d at 1575. Metrologic's representations to the patent examiner that the scan field "is projected away from said scanner support stand and said hand-supportable housing" (App. of Exs. to Symbol's Br., Ex. 15 at 3-4), and "extends above the countertop surface" (*id*. at 8), simply do not foreclose a downwardly-angled laser beam. As such, they do not represent a "clear and unmistakable" disavowal of claim scope. Omega Eng'g, 334 F.3d at 1325-26.

For the above reasons, the Court finds that the corresponding structure is a support structure. The Court also finds that limitation 1(b)(1) shall be construed as "a support structure for receiving and supporting at least a portion of the hand-supportable housing."

6. Limitation 1(b)(2)

" *a base portion mountable relative to a countertop surface so that when said hand-supportable housing is supported within said housing support means during said stand-supported mode of automatic operation, said scan field is projected away from said scanner support stand and said hand-supportable housing, and extends above said countertop surface permitting the automatic reading of bar code symbols on objects passed by said scanner support stand* "
Limitation 1(b)(2) is not written in means-plus-function form. Accordingly, the Court will interpret this claim element in accordance with ordinary rules of construction.

The sole dispute here concerns Symbol's added limitation that the hand-supportable housing is supported in such a way that the laser beam is prevented from being pointed downwardly. For the reasons discussed above, the requirement in limitation 1(b)(2) that "said scan field is projected away from said scanner support stand and said hand-supportable housing, and extends above the countertop surface" does not foreclose a downwardly-directed laser beam. A laser beam may be "projected away" from the scanner support stand and still have a downward angle. Likewise, a field that "extends above the countertop surface" need not be strictly horizontal or upwardly-directed. Because the language of limitation 1(b)(2) admits of a downwardly-directed laser beam, and because nothing in the prosecution history of the '953 patent indicates that Metrologic clearly and unambiguously disavowed a downwardly-directed laser beam, the Court rejects

Symbol's proposed limitation.

In its initial claim construction brief, Metrologic argued that this claim "should be construed in accordance with the plain meaning of the words therein." (Metrologic's Br. 25.) In response to supplemental questions posed to the parties by the Court, Metrologic submitted its proposed interpretation of the claim element. Having reviewed Metrologic's proposed interpretation, the Court finds that it comports with the plain language of limitation 1(b)(2). Therefore, the Court adopts Metrologic's proposed interpretation, as modified: "a base portion mountable on a countertop surface where the housing support means and the base portion cooperate to support the housing of the reader during a stand-supported mode of operation to project the scan field away from the scanner support stand and above the countertop surface to allow for the automatic reading of bar code symbols on objects passed by the stand."

7. Claim 2

" *The automatic bar code symbol reading system of claim 1, wherein said bar code symbol has first and second envelope borders, and said bar code symbol detection means detects said bar code symbol by detecting said first and second envelope borders*."
[45] Claim 2 is not a means-plus-function claim. It does not employ the word "means," and it clearly recites structure. Because the recited structure is "[t]he automatic bar code symbol reading system of claim 1," claim 2 depends from independent claim 1. As a dependent claim, claim 2 must be construed to incorporate by reference all the limitations of claim 1. 35 U.S.C. s. 112 para. 4; Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., 370 F.3d 1131, 1146 (Fed.Cir.2004).

A dependent claim must add a further limitation on the within-referenced independent claim. 35 U.S.C. s. 112 para. 4. Here, claim 2 adds the limitation that, with respect to a bar code symbol that has "first and second envelope borders," the bar code symbol detection means claimed in limitation 1(a)(3) "detects said bar code symbol by detecting said first and second envelope borders." '698 Patent col. 16 ll. 15-16, 17-18. Thus, claim 2 specifically incorporates by reference the bar code symbol detection means of limitation 1(a)(3), and thereby incorporates by reference all limitations of that claim element. It follows that to ascertain the scope of claim 2, it is necessary to employ a means-plus-function analysis to the bar code symbol detection means of limitation 1(a)(3). *See, e.g.,* Mas-Hamilton Group v. LaGard, Inc., 21 F.Supp.2d 700, 727 (E.D.Ky.1997) (construing term "movable projecting element" of dependent non-means claim as a means-plus-function element because it referred to "movable element" of independent means-plus-function claim), *aff'd,* 156 F.3d 1206 (Fed.Cir.1998).

a. Function

Metrologic argues that the means-plus-function element of claim 2 performs the function of "processing produced scan data so as to detect a scanned bar code symbol by its first and second envelope borders and to automatically generate an activation control signal in response to the detection of the scanned bar code symbol." (Metrologic's Br. 26.) In its brief, Metrologic explains that a person of ordinary skill in the art would understand the term "envelope border" to mean the white space at either end of a bar code symbol, and that claim 2 (corresponding to the block functional diagram at Figure 4) describes circuitry that measures white space at both ends of a bar code symbol. Symbol rejects this definition, arguing that the disclosed structure detects only "*one* white space of minimum size adjacent to a minimum length of bars and spaces." (Symbol's Rebuttal Br. 20 (emphasis in original).) Accordingly, Symbol seeks an interpretation of claim 2 in which the system of claim 1 detects a bar code "by identifying two different characteristics, such as length and white border minimums, that distinguish scan data that may be from a bar code from other types of scan data." (Symbol's Br. 15.)

The Court first considers the term "envelope borders." *See* Baldwin Graphic Sys., Inc. v. Siebert, Inc., No.

03 C 7713, 2005 WL 1838451, at (N.D.Ill. July 28, 2005) ("Claim construction analysis begins with the language of the claims."). Claim 2 expressly requires the detection of "first and second envelope borders." '698 Patent col. 16 ll. 15-16. Metrologic defines "envelope borders" as "the 'white space' that is necessary on either end of the bar code symbol." (Metrologic's Br. 26.) By comparison, Symbol argues that "first and second envelope borders" should be defined to mean "two different characteristics, such as length and white border minimums." (Symbol's Br. 15.) In support of its argument, Symbol cites to Metrologic's preferred embodiment.

The '698 patent describes its preferred embodiment as "a bar code envelope detector" that produces a signal indicative of the "general envelope" of a bar code symbol. '698 Patent col. 8 ll. 14-15, 17. In this embodiment, the bar code symbol detection means optically measures a bar code symbol to ascertain that it satisfies "the minimum required 'boarder [sic] width' of the bar code symbol" and "the minimum required bar code length." Id. col. 8 ll. 37-49; *see also* id. Fig. 4 (showing voltages for "border threshold" and "bar code threshold"). A bar code symbol meeting both of these minimum requirements causes the bar code presence detection means in the preferred embodiment to generate activation control signal A_2, indicating "that a bar code is present in the scan field." Id. col. 8 ll. 64-65. Thus, it is apparent that the embodiment that Metrologic labels a "bar code envelope detector" measures both the border width and the length of a bar code symbol.

The parties' dispute with respect to claim 2 brings two foundational principles of patent law squarely into conflict. On one hand, "[c]ourts apply a heavy presumption that claim language means what it says. Thus, 'unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art.' " Baldwin Graphic, 2005 WL 1838451, at *3 (citation omitted) (quoting Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed.Cir.2002)); *see also* CCS Fitness, 288 F.3d at 1366 ("Generally speaking, we indulge a 'heavy presumption' that a claim term carries its ordinary and customary meaning." (quoting Johnson Worldwide, 175 F.3d at 989)). Symbol's proposed interpretation would violate this principle by affording the term "first and second envelope borders" a definition that (1) is contrary to the ordinary usage of the words "envelope" and "border," as they appear in the language of the claim; FN11 (2) is unsupported by the express language of the specification, which says nothing about undefined "characteristics" or "attributes" of a bar code symbol, *see* ' 698 Patent col. 8 ll. 13-49 (referring specifically to "boarder [sic] width" and "bar code length"); and (3) conflicts with the understanding of persons of ordinary skill in the art (*see, e.g.,* Decl. of Peter Schuyler, Esq. ("Schuyler Decl.") in Supp. of Metrologic's Br., Ex. H (Dep. of Dr. David Allais) 254:16-21, June 17, 2005 (characterizing "envelope borders" as being "transitions indicating a bar code" and opining that this definition was consistent "with one or both of the required quiet zones"); Schuyler Decl. in Supp. of Metrologic's Rebuttal Br., Ex. G (Supplemental Expert Witness Report of Jay M. Eastman, Ph.D.) para.para. 23-24 (noting that Figure 4 describes a method for detecting borders or "envelopes" of bar code symbol, and discussing borders as "white space" next to a bar code symbol)). Furthermore, Symbol's proposed definition would impermissibly import a limitation from the preferred embodiment into the straightforward language of the claim. *See* Fuji Photo Film Co. v. Int'l Trade Comm'n, 386 F.3d 1095, 1106 (Fed.Cir.2004).

FN11. Webster's defines "border" as "1 a: an outer part or edge: the part that parallels the boundary or outline of something: margin." *Webster's Third New International Dictionary* 255 (1993). It defines "envelope" as "1: something that envelops." *Id.* 759. Thus, the reference in claim 2 to a bar code symbol's "envelope borders" would appear to indicate the *margins* that *envelop* a bar code symbol. Neither individually nor combined do the words "border" and "envelope," in common parlance, connote undefined "attributes," such as length, of the bar code symbol itself. (*Cf.* Symbol's Rebuttal Br. 20-21.)

[46] On the other hand, while a court may not import limitations from a preferred embodiment into a claim, neither may a court interpret a claim to exclude a preferred embodiment. Primos, Inc. v. Hunter's

Specialties, Inc., 451 F.3d 841, 848 (Fed.Cir.2006). Metrologic's proposed interpretation, which seemingly calls for the bar code presence detection means to measure only the white space at either end of a bar code symbol, would appear to exclude the '698 patent's own preferred embodiment. While poor claims drafting may be to blame for this quandary, the Court must nonetheless attempt to resolve this inconsistency by giving claim 2 a construction that does not frustrate the goal of providing the public with fair notice of a patent's claim scope. *See* London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538 (Fed.Cir.1991).

The Court finds that Metrologic's proposed interpretation is the better construction. Claim 2 expressly presupposes that the bar code symbol being detected in fact has first and second envelope borders. *See* '698 Patent col. 16 ll. 15-16 ("... wherein said bar code symbol has first and second envelope borders ..."). There is no indication in the specification that the bar code symbol being detected by the preferred embodiment has first and second envelope borders. Therefore, the Court cannot conclude that the preferred embodiment performs in a manner inconsistent with the bar code symbol detection means of claim 2.

In addition, the preferred embodiment simply states that it measures "minimum required 'boarder [sic] width' of the bar code symbol." Id. col. 8 ll. 44-45. It does not state, however, that in measuring border width, only one envelope border is measured. The Court finds no basis to conclude that the preferred embodiment could not, in fact, measure the width of both first and second envelope borders. That it also measures the length of the bar code symbol is of no importance in construing claim 2 to detect first and second envelope borders; a preferred embodiment may be narrower than the claim or claims to which it corresponds. *See* Resonate Inc. v. Alteon Websystems, Inc., 338 F.3d 1360, 1367 (Fed.Cir.2003).

Accordingly, the Court finds that Metrologic's proposed interpretation of claim 2 more naturally accords with the plain meaning of its terms and the understanding of those skilled in the art, and need not exclude the preferred embodiment. For the reasons discussed in connection with limitation 1(a)(3), the Court also rejects Symbol's interpretation of the bar code symbol detection means as generating an activation control signal in response to scan data that *may* be from a bar code, as opposed to scan data that *is* from a bar code. The Court therefore construes the claimed function as "processing produced scan data so as to detect said scanned bar code symbol by its first and second envelope borders and to automatically generate an activation control signal in response to the detection of said scanned bar code symbol." The Court further defines "first and second envelope borders" to be the "white space" that is necessary on each end of the bar code symbol.

b. Corresponding Structure

Metrologic suggests that the corresponding structure is a "hard-wired circuit and structural equivalents, including a programmable microprocessor." (Metrologic's Br. 26.) The Court has already identified the structure corresponding to claim 1(a)(3), and finds no reason to deviate from that construction. Therefore, consistent with claim 1(a)(3), the Court finds that the structure corresponding to the means element of claim 2 is "an analog or digital circuit and structural equivalents."

Accordingly, the Court construes claim 2 as follows: "The system of claim 1, including an analog or digital circuit and structural equivalents for processing produced scan data so as to detect said scanned bar code symbol by its first and second envelope borders and to automatically generate an activation control signal in response to the detection of said scanned bar code symbol, where the first and second envelope borders are the white space that is necessary on either end of said bar code symbol."

B. The '971 Patent

[47] The parties dispute the interpretation of several elements in claims 44 and 46 of the '971 patent. In claim 44, they dispute the interpretation of the following elements: the preamble, the "laser beam producing

means," the "laser light detecting means," the "scan data processing means," and the "control means." They also generally dispute the construction of dependent claim 46.

1. Claim 44-Preamble

" *An automatic bar code symbol reading system having a selectable mode of operation in which only a plurality of consecutively different bar code symbols on one or more objects can be read, said system comprising:* "
The Court finds that the preamble to claim 44 does not employ means-plus-function language and therefore should be construed in accordance with ordinary principles of claim construction.

The parties agree that the preamble to claim 44 is a limitation because during prosecution, Metrologic amended the proposed claim in response to a December 16, 1992 office action by the PTO. *See* In re Cruciferous Sprout Litig., 301 F.3d 1343, 1347-48 (Fed.Cir.2002). However, the parties dispute the reason for the amendment. Symbol vigorously contends that Metrologic amended its proposed claim to distinguish over prior art (particularly Heiman), and that statements that Metrologic made to the patent examiner during prosecution are inconsistent with Metrologic's proposed interpretation of the preamble. Metrologic proposes that the preamble be interpreted to mean that the claimed device has "a selectable mode of operation that allows it to read only a plurality of consecutively different bar code symbols." (Metrologic's Br. 30.) According to Metrologic, this mode of operation prevents a "re-read of the same bar code for a set time interval." (*Id*. 31.) Symbol responds that the preamble must be construed such that "only consecutively different bar code symbols are decoded and the same bar code symbol cannot be decoded consecutively even when the bar code symbol is removed from the scan field for a finite time." (Symbol's Br. 15.) Thus, Symbol interprets "read" to mean "decoded," FN12 and seeks to add the further limitation that the claimed invention cannot decode and output data for a bar code symbol scanned twice consecutively, even if that bar code symbol is removed from the scan field for a finite period of time.

FN12. Symbol defines "decoding" as the retrieval of encoded information from scan data to produce character data. (*See* Symbol's Br. 3.)

a. Definition of "Read"

The Court first considers Symbol's contention that the term "read" should be construed as "decoded." This argument is the product of several inferences that Symbol draws from the specification in which the patentees appear to utilize the word "read" to describe functions described elsewhere as decoding. For instance, Symbol points out that the "patent teaches that bar code decoding occurs during the 'bar code symbol reading' state." (Symbol's Rebuttal Br. 22.) While the occurrence of "decoding" during the "reading state" might superficially imply that reading means decoding, it could just as easily mean that decoding is a subset of reading, thus illustrating why the Federal Circuit has "consistently warned against" importing limitations from inferences drawn from the specification. Liquid Dynamics, 355 F.3d at 1361. Symbol argues that elsewhere, the specification "equates a bar code that is read with one that is 'scanned and decoded.' " (Symbol's Rebuttal Br. 22.) *See, e.g.,* '971 Patent col. 1 ll. 38-39 ("... reading (i.e. scanning and decoding) ..."); id. col. 7 ll. 18-19 (same); id. col. 16 ll. 53 ("... successfully read (i.e. scanned and decoded) ..."); id. col. 25 l. 55 (same). This argument actually seems to undercut Symbol's argument that the term "read" should be construed to mean *only* "decoded," and in any event does not imply that every use of the term "read" in the '971 patent means "scanned and decoded." It is more likely, in light of its differing usage elsewhere in the specification, that the patentees intended the term "read" to mean "scanned and decoded" only where they expressly indicated. As such, Symbol's argument once again seeks impermissibly to add a limitation based on an inference drawn from selected portions of the specification. *See* Resonate Inc., 338 F.3d at 1364-65.

Symbol also notes that with respect to the state diagram of Figure 13, which schematically represents the operation of the preferred embodiments disclosed in the specification,FN13 the "bar code symbol reading" state (State C or State F) is depicted as occurring after the "bar code symbol presence detection" state (State B or State E) but before the "symbol character data transmission/storage" state (State D). ' 971 Patent Fig. 13. The specification teaches that activation control signals trigger the transition between states, and that activation control signal A_3, which causes the system to transition from State C or State F to State D, is produced "[w]hen the symbol decoding module successfully decodes a bar code symbol" within a predetermined time period. Id. col. 13 ll. 23-31; *see also* id. col. 17 ll. 16-19; col. 27 l. 68-col. 28 l. 13. Thus, the ' 971 patent discloses that in both preferred embodiments, the "bar code symbol reading" state ends when the system controller receives signal A_3, signifying a successful decode. *See* id. col. 17 ll. 16-30; col. 26 ll. 21-35. From this disclosure, Symbol concludes that "reading" cannot mean more than "decoding."

FN13. The Court disagrees with Symbol's contention that Figure 13 represents a separate embodiment of the claimed invention. Under the heading "Brief Description of the Drawings," the '971 patent describes Figure 13 as "a state diagram illustrating the various states that the automatic bar code symbol reading devices *of the illustrative embodiments* may undergo during the course of their operation." '971 Patent col. 5 l. 67-col. 6 l. 2 (emphasis added). It is therefore apparent that the state diagram of Figure 13 applies to both of the preferred embodiments disclosed in the specification, and is not itself a preferred embodiment.

FIG. 13

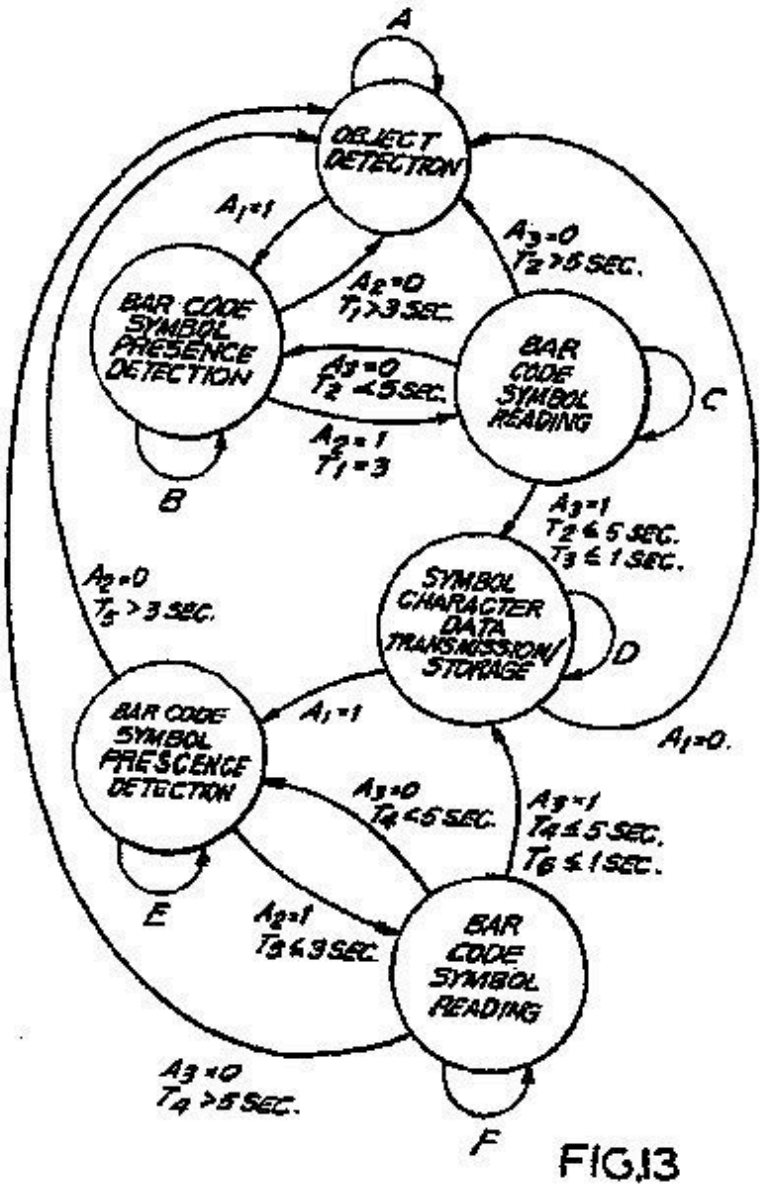


FIG.13

Once again, Symbol's argument proves too much, placing undue significance on the labels attached to State C and State F and drawing sweeping inferences from the figures and illustrative embodiments. This is not an instance in which the patent makes repeated and consistent limiting statements or represents that important objects of the invention are served by a bar code symbol reading state that is conterminouswith bar code symbol decoding. *Cf.* Honeywell Int'l, 452 F.3d at 1320; Alloc, Inc., 342 F.3d at 1370. Nor is claim 44 a means-plus-function claim, which at least would require the Court to look to the structure disclosed in the specification to ascertain the limits of the claim. The preferred embodiments disclosed in the '971 patent do not represent limitations on the claimed invention, and therefore do not support Symbol's argument that reading and decoding are the same. *See* Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed.Cir.1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.").

[48] If the '971 patent consistently used the term "read" to mean decode, as Symbol suggests, then the Court might have less difficulty in adopting Symbol's proposed construction. However, with respect to its use of the term "read" and variations on that word, the '971 patent is far from consistent. Throughout the patent, examples are legion of the terms "read" or "reading" being used to indicate more than simply "decoding." The very title of the claimed invention is "Automatic Bar Code Reading System Having Selectable Long Range and Short Range Modes of Operation," and even Symbol would concede that the claimed invention purports to do more than simply "decode" bar code symbols. *Cf.* '971 Patent Abstract ("Method and apparatus for automatically reading bar code symbols is disclosed."). Elsewhere, the specification equates reading with "recognition." *See* id. col. 1 l. 16 ("... symbol reading (i.e. recognition) systems ..."). Most significantly, Claim 44-the instant claim-claims "an automatic bar code symbol reading system" comprising, *inter alia,* a "scan data processing means" that "produc [es] ... symbol character data," as well as a "control means" that both decodes and produces symbol character data. Id. col. 42 ll. 25, 53, 57, 60-68. These uses of the term "read" are inconsistent with Symbol's proposed construction. FN14

FN14. In addition, claim 44 uses the term "read" in the preamble, while using the term "decode" in other elements of claim 44. *See* '971 Patent col. 42 ll. 28, 54-55, 63. "A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so." Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed.Cir.2005); *see also* Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1410 (Fed.Cir.2004) (stating that an interpretation that renders claim terms superfluous is generally disfavored). Symbol's narrow definition of "read" to mean "decoded" effectively would render the term "read" superfluous.

In a related argument, Symbol claims to find support for its interpretation of "read" in a June 23, 1993 Information Disclosure Statement ("IDS") that Metrologic submitted to the patent examiner during prosecution of the '971 patent. In that IDS, Metrologic purportedly distinguished over a prior art patent, No. 5,216,231 ("Ouchi"), on the grounds that the system claimed in Ouchi decodes every bar code symbol that it scans and compares successive decoded bar code data before outputting symbol character data only for consecutively different bar code symbols. Symbol claims that Metrologic distinguished its own system over Ouchi by representing that the Metrologic system would not decode the same bar code symbol consecutively, but would decode and produce symbol character data only for consecutively different bar code symbols. Thus, according to Symbol, where the '971 patent claims a system having a mode of operation in which "only a plurality of consecutively different bar code symbols on one or more objects can be *read,*" id. col. 42 ll. 26-28 (emphasis added), the only interpretation that is consistent with Metrologic's IDS is an interpretation in which "read" means "decoded."

[49] Statements made in an IDS may be relevant in determining the proper scope of a claim. *See* Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed.Cir.1997). However, a court will not limit claim scope based on statements in an IDS that do not expressly distinguish over prior art. Id. (refusing to limit claim where IDS did not distinguish over prior art with respect to the relevant property); *see also* KX Indus. and Koslow Tech. Corp., 18 Fed.Appx. 871, 876 (Fed.Cir.2001) (requiring "express statements or arguments of limitation" to be made in IDS before IDS will limit claim scope). Metrolologic's IDS simply does not contain the express statements or arguments of limitation that Symbol urges the Court to find. In the IDS, Metrologic distinguished over Ouchi on the grounds that Ouchi

clearly does not disclose or even hint at an automatic bar code symbol reading system having, in combination, a hand-supportable *laser* scanner and scan data processor which sequentially detects and decodes a plurality of consecutively different bar code symbols and sequentially produces only symbol character data representative thereof, as the plurality of consecutively different bar code symbols are sequentially scanned by a visible laser beam produced from the hand-supportable laser scanner.

(Schuyler Decl. Supp. Metrologic's Br., Ex. K at 3 (underline in original).) As is readily apparent, Metrologic did *not* distinguish Ouchi for being unable to produce symbol character data only for consecutively different bar code symbols. Rather, Metrologic represented that Ouchi lacked the *combination* of qualities possessed by the Metrologic system, *one* of which being a processor that "sequentially detects and decodes a plurality of consecutively different bar code symbols and sequentially produces only symbol character data representative thereof." (*Id.*) In essence, Metrologic was saying in its IDS that Ouchi may be capable of possessing some of the qualities of the Metrologic system, but not all. Therefore, the Court rejects Symbol's crabbed reading of the June 23, 1993 IDS as expressly distinguishing over prior art that decodes consecutively identical bar code symbols. By extension, the Court finds no basis in the IDS for defining "read" to mean "decoded."

Finally, the Court takes note of Metrologic's argument that defining "read" to mean "decoded" effectively would exclude the preferred embodiments. *See* SanDisk Corp. v. Memorex Prods., 415 F.3d 1278, 1285 ("A claim construction that excludes a preferred embodiment ... 'is rarely, if ever, correct.' " (quoting Vitronics, 90 F.3d at 1583)). One of the objects of the invention disclosed in the '971 patent is "to provide an automatic bar code symbol reading device which prevents multiple reading of the same bar code symbol due to dwelling of scanning beam upon a bar code symbol for an extended period of time." '971 Patent col. 3 ll. 36-40. The patent teaches that bar code symbol decoding occurs *before* the system controller compares consecutive bar code symbols to determine whether they are different. *See* id. col. 18 ll. 8-20; col. 27 ll. 18-29; Fig. 8E (Block Y and Block Z); Fig. 12E (Block Y and Block Z). Therefore, Metrologic reasons, the preferred embodiments must both decode and compare bar code symbols in order to carry out the object of preventing multiple "reading" of the same bar code symbol. While this argument is some evidence of the patentees' intention to define "read" as including both decoding and comparing, it arguably conflicts with the specification's disclosure elsewhere that activation control signal A_3 indicates "that a bar code symbol has been successfully read." *See, e.g.,* id. col. 26 ll. 22-23; *cf.* id. Fig. 8E (Block Y); Fig. 12E (Block Y). Nevertheless, it appears that a certain amount of inconsistency is inevitable in this patent. (*See Markman* Hr'g Tr. 111:25-112:6 (conceding that the '971 patent sometimes uses "read" to be limited to functions occurring before the compare function).) The Court finds that even if the patent fails to signal uniformly and unambiguously the patentees' intention to define "read" to include decoding and comparing, it does clearly refute Symbol's argument that "read" is narrowly limited to mean "decoded."

For all of these reasons, it is evident that the term "read," as it appears in claim 44, cannot be construed narrowly to mean "decoded." Its use elsewhere in the '971 patent suggests a broader meaning, and its use within claim 44 suggests a meaning that includes decoding bar code symbols *and* producing symbol character data for consecutively different bar code symbols. When read in conjunction with the specification, *see* id. col. 18 ll. 8-20; col. 27 ll. 18-28; Fig. 8E; Fig. 12E, this broader meaning dictates that "reading" includes the function of comparing consecutive, decoded bar code symbols. (*See* Metrologic's Rebuttal Br. 22-23.) Nothing in the prosecution history of the '971 patent clearly and unmistakably refutes this conclusion. Accordingly, the Court rejects Symbol's argument that the '971 patent defines the term "read" to mean "decoded."

b. Decoding of Consecutive Bar Code Symbols

Symbol's second major argument with respect to the preamble of claim 44 is that it must be interpreted to contain the limitation that the same bar code symbol cannot be "decoded" consecutively "even when the bar code symbol is removed from the scan field for a finite time." (Symbol's Br. 15.) Symbol maintains that during a June 10, 1993 interview with the patent examiner and in a June 13, 1993 application amendment, Metrologic distinguished over the Heiman patent by arguing that Heiman claimed a system "wholly incapable of operating in a mode in which only a plurality of consecutively different bar code symbols can be read." (App. of Exs. to Symbol's Br., Ex. 17 at 16.) In fact, Symbol argues, the system of Heiman will

decode and output symbol character data for consecutively identical bar code symbols if the bar code symbol is removed from the scan field for a finite period of time. By distinguishing over Heiman, Symbol insists, Metrologic disclaimed from the scope of claim 44 a system that will decode and output symbol character data for consecutively identical bar code symbols, even if that symbol is removed from the scan field for a finite time.

Symbol's added limitation is unavailing. First, the proposed limitation contradicts the teachings of the specification. *See* '971 Patent col. 18 ll. 5-40; col. 27 ll. 15-29. In the preferred embodiments, the '971 patent teaches that decoding occurs *before* any comparison is made of consecutive bar code symbols to determine whether they are the same. Id. col. 18 ll. 14-17 ("[T]he system controller determines at Block Z whether the *decoded* bar code symbol is different from the previously *decoded* bar code symbol." (emphasis added)); col. 27 ll. 24-27 (same). The specification goes on to teach that "[i]f ... the *decoded* bar code symbol is not different than the previously *decoded* bar code symbol," id. col. 18 ll. 21-22 (emphasis added); col. 27 ll. 30-31 (emphasis added), then, upon the lapse of a predetermined period of time, the system controller deactivates, among other components, the laser and bar code decoding means so as to prevent further scanning and decoding of the same bar code symbol. *See* id. col. 18 ll. 21-40; col. 27 ll. 30-51. This description makes clear that in both preferred embodiments, the reading system can decode the same bar code symbol consecutively, without regard to whether the bar code symbol is removed from the scan field for a finite time. *See also* id. Fig. 8E (depicting Block Z as the logical operation in which the system control program asks, "Is *decoded* bar code symbol different from the previously *decoded* bar code symbol?" (emphasis added)); id. Fig. 12E (same). Because "[a] claim construction that excludes a preferred embodiment ... is 'rarely, if ever, correct,' " SanDisk Corp., 415 F.3d at 1285 (quoting Vitronics, 90 F.3d at 1583), Symbol's proposed limitation is unavailing.

Second, the Court does not find that Metrologic's statements to the patent examiner in June 1993 were a clear and unmistakable disavowal of claim scope encompassing a reading system capable of decoding consecutively different bar code symbols. Symbol's argument in this regard rests on Metrologic's summary interpretation of Heiman as being "wholly incapable of operating in a mode in which only a plurality of consecutively different bar code symbols can be read" (App. of Exs. to Symbol's Br., Ex. 17 at 16), as well as the extrinsic deposition testimony of Metrologic's validity expert, Mr. Christopher Wiklof, concerning the scan data processing means element of claim 44. The Court finds neither of these sources persuasive of a clear and unmistakable disavowal with respect to the preamble of claim 44. *See* Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1353 (Fed.Cir.2005) ("The presence of an undesirable prior art feature in addition to the elements recited in the claim, even when the undesirability of that feature formed the basis of an amendment and argument overcoming a rejection during prosecution, does not limit the claim unless there is a clear and unmistakable disclaimer of claim scope.").

For all of the reasons discussed above, the Court construes the preamble of claim 44 as follows: "An automatic bar code symbol reading system having a selectable mode of operation that allows it to read only a plurality of consecutively different bar code symbols." Furthermore, the Court defines the term "read" as used in the preamble of claim 44 to include decoding bar code symbols and comparing decoded bar code symbols so as to produce symbol character data only for consecutively different bar code symbols.

2. Claim 44-Laser Beam Producing Means

" *laser beam producing means, disposed in said hand-supportable housing, for producing a visible laser beam within said hand-supportable housing;* "
The parties agree that the laser beam producing means element of claim 44 employs means-plus-function language. Having independently reviewed the claim language, the Court finds that the language employs the term "means" and does not recite any structure for performing the claimed function. In accordance with Federal Circuit guidance, the Court concludes that means-plus-function principles govern the construction

of the laser beam producing means element of claim 44.

a. Function

Both parties essentially agree that the claimed function is "producing a visible laser beam," and neither the specification nor the claim itself suggests otherwise. Thus, the Court finds that the recited function is "producing a visible laser beam."

b. Corresponding Structure

[50] Both parties agree that the corresponding structure is the visible laser diode 47 depicted in Figure 4. As with claim 1(a)(2)(i) of the '698 patent, however, Symbol urges the Court to recognize the additional limitation that the visible laser diode is "normally-off," and that it produces a visible laser beam "in response to an activation signal." (Symbol's Br. 19.) Symbol draws this limitation from the preferred embodiment depicted in Figure 4 and described in the specification, wherein visible laser diode 47 is activated by laser diode enable signal E_L in response to a successful object detection. In addition, Symbol cites the Background section of the specification, where Metrologic disparages the continuously-on laser beams of Boles and Heiman that drain limited power reserves in battery-powered applications and necessitate laser emission control measures.

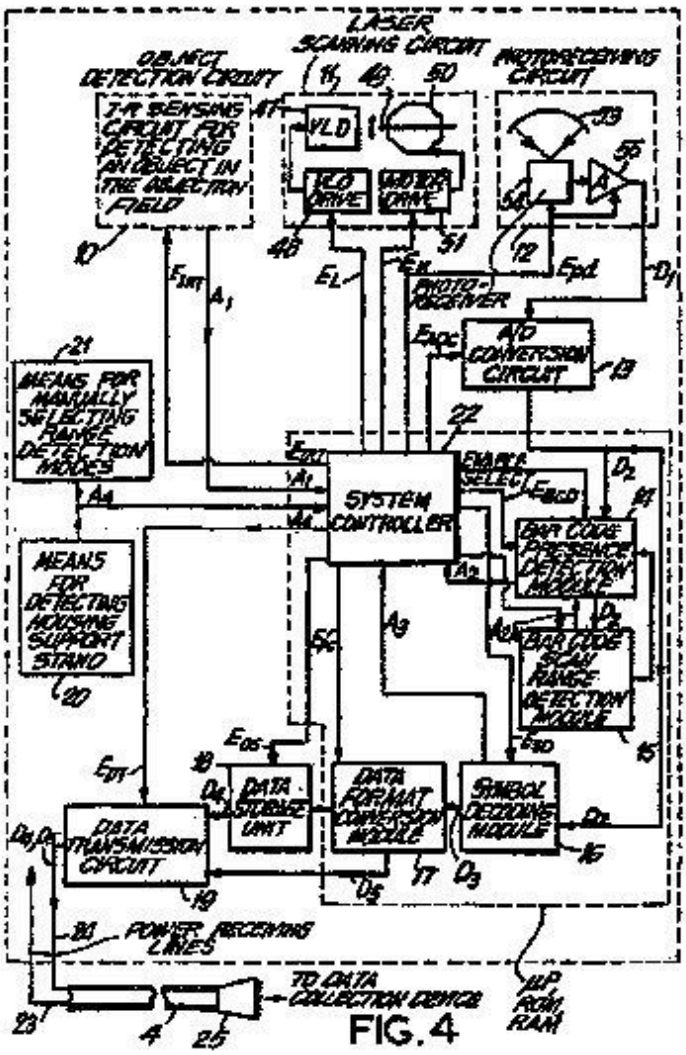


FIG. 4

FIG. 4

The '971 patent omits several significant statements found in the '698 patent. In the '698 patent, in addition to disparaging the power consumption shortcomings of Boles and Heiman and describing a preferred embodiment in which the visible laser diode is normally off, *see, e.g.*, '698 Patent col. 2 ll. 14-15, 43-47; col. 5 ll. 52-57, Fig. 8A (Block A), the specification lists as an "object" of the invention the ability to carry out "a wide number of system control operations" in a "power conserving manner" so as to "permit automatic reading of bar code symbols in a variety of diverse applications," id. col. 3 ll. 14-17. Another significant object of the ' 698 patent is to provide a device "which is capable of determining the presence of an object without enabling the scanning means of the device." Id. col. 3 ll. 28-29. The '698 patent further trumpets the "unique architecture" of the single preferred embodiment, "which provides a great degree of versatility in system capability and operation, as well as power conservation." Id. col. 5 ll. 27-31 (referring also to the "advantages of this control system architecture"). Together, these statements clearly signal the importance of power conservation and laser emission control to the invention claimed in the ' 698 patent,

and render the normally-off visible laser diode of the preferred embodiment an essential feature of the invention.

By contrast, the '971 patent lacks any statements indicating the general desirability of a normally-off visible laser diode. It does not claim as an object of the invention the ability to operate in a "power conserving manner" or to detect an object "without enabling the scanning means of the device." *Cf.* '698 Patent col. 3 ll. 15, 29. Nor does it reiterate the "advantages" of the "power conservation" features of the preferred embodiments. *Cf.* id. col. 29, 30. Stripped of these statements, the '971 patent contains only two references arguably relevant to Symbol's proposed limitation. First, the Background section of the specification merely indicates that the Boles and Heiman systems drain "limited power reserves" in "battery power" applications. *See* '971 col. 2 ll. 15, 16, 43-44. *But see* id. col. 2 ll. 45-47 (noting also that the continuously-on laser of Heiman necessitates "laser emission control measures"). Second, the preferred embodiments appear to depict a visible laser diode that must be activated by laser diode enable signal E_L in response to a successful object detection. Neither of these references, alone or in combination, is sufficient to warrant importing the limitation that the visible laser diode is normally off.

[51] With respect to Boles and Heiman, the '971 patent simply identifies a problem that those systems exhibited in the limited context of battery-powered applications. Unlike the '698 patent, the '971 patent does not mention power drain apart from battery-powered applications. A patent specification that identifies a shortcoming of prior art devices in certain contexts does not, without more, limit its claim scope in all contexts. *See* ResQNet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1380 (Fed.Cir.2003) (referring to the "general rule that limitations should not be imported from the specification based solely on overcoming problems in the prior art"). With respect to the preferred embodiments, it need hardly be repeated that a preferred embodiment may be narrower than the scope of the claims, and a court may not read limitations into a claim from the preferred embodiment. Resonate Inc., 338 F.3d at 1367. Each of these principles "is a corollary of the broader principle against importing limitations from the specification into the claims." ResQNet.com, Inc., 346 F.3d at 1380; *see also* Resonate Inc., 338 F.3d at 1367 (citing Electro Medical Systems, S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir.1994), which warns that "claims are not to be interpreted by adding limitations appearing only in the specification").

For the foregoing reasons, the Court finds that the corresponding structure is a visible laser diode. Accordingly, the Court construes the laser beam producing means element of claim 44 as follows: "a visible laser diode and its structural equivalents for producing a visible laser beam within said hand-supportable housing."

3. Claim 44-Laser Light Detecting Means

" *laser light detecting means, disposed in said hand-supportable housing, for detecting the intensity of laser light reflected off each said consecutively different said [sic] bar code symbol as said visible laser beam is repeatedly scanned across said scan field and each said consecutively different bar code symbol, and for automatically producing scan data indicative of each said detected intensity;* "
The parties agree that the laser light detecting means element of claim 44 employs means-plus-function language. The Court has independently reviewed the claim language and finds that it employs the term "means" and does not recite structure. Thus, the Court concludes that means-plus-function principles govern the construction of the laser light detecting means element of claim 44.

a. Function

There appears to be no dispute that the laser light detecting means element of claim 44 discloses the function of "detecting the intensity of laser light reflected off of a bar code symbol and ... automatically producing scan data indicative of the detected light intensity." (Metrologic's Br. 32; Symbol's Br. 20

(describing function as "detecting and producing").) To maintain faithful adherence to the language of the claim, *see* Phillips, 415 F.3d at 1316, the Court construes the claimed function as follows: "detecting the intensity of laser light reflected off of a bar code symbol and automatically producing scan data indicative of the detected light intensity."

b. Corresponding Structure

While both parties agree that the photoreceiver 54 is required to carry out the first part of the function of "detecting the intensity of laser light reflected off of a bar code symbol," they disagree as to whether a preamplifier 55 is needed to perform the function of "automatically producing scan data indicative of the detected light intensity." Metrologic argues that a photoreceiver and a preamplifier, working in tandem, are necessary to produce scan data signal D_1, as depicted in Figure 4. Symbol responds that the photoreceiver alone is capable of producing scan data indicative of the detected light intensity.

This dispute mirrors the parties' dispute with respect to limitation 1(a)(2)(iii) of the '698 patent. For precisely the reasons articulated with respect to that limitation, the Court finds that the structure that corresponds to the claimed function in the laser light detecting means element of claim 44 is a photoreceiver and a preamplifier. Specifically, the specification of the '971 patent teaches that photoreceiver 54 "produces an analog signal which is subsequently amplified by preamplifier 55 to produce analog scan data signal D_1." '971 Patent col. 11 ll. 23-25. The claim element expressly requires the production of "scan data," id. col. 42 l. 51, and the only signal generated by any component of the laser light detecting means that is labeled "scan data" is "analog scan data signal D_1," id. col. 11 ll. 24-25. The specification merely refers to the unlabeled signal shown in Figure 4 flowing from photoreceiver 54 to preamplifier 55 as "an analog signal." Id. col. 11 l. 23.

Accordingly, the Court construes the laser light detecting means element of claim 44 as follows: "a photoreceiver and a preamplifier and their structural equivalents for detecting the intensity of laser light reflected off of a bar code symbol and automatically producing scan data indicative of the detected light intensity."

4. Claim 44-Scan Data Processing Means

" *scan data processing means for processing produced scan data in order to sequentially detect and decode each one of said plurality of consecutively different bar code symbols, and for automatically producing only symbol character data representative of each one of said plurality of consecutively different bar code symbols;* "
The parties agree that the scan data processing means element of claim 44 employs means-plus-function language. The Court independently finds that this element employs the term "means" and does not recite structure. Thus, the Court shall construe the scan data processing means element of claim 44 in accordance with mean-plus-function principles.

a. Function

Metrologic interprets the claimed function as "processing scan data in order to ... sequentially detect and decode bar code symbols, and ... automatically produce only symbol character data representative of each consecutively different bar code symbol." (Metrologic's Br. 33.) While conceding that this interpretation adheres to the language of the claim element, Symbol faults Metrologic for failing to explain what the function means. According to Symbol, the construction must include the functional limitation of producing symbol character data "only for consecutively different bar code symbols." (Symbol's Rebuttal Br. 27.) This limitation, Symbol contends, flows from Metrologic's disclaimer of certain embodiments during prosecution, as well as the prosecution history concerning Metrologic's addition of the word "only."

First, Symbol argues that while prosecuting the '971 patent, Metrologic distinguished the prior art reference of Ouchi by arguing to the patent examiner that Ouchi had to decode every bar code symbol scanned, whereas the system of claim 44 decoded and produced symbol character data only for consecutively different bar code symbols. In support of this argument, Symbol relies on that portion of the June 23, 1993 IDS cited in connection with its proposed construction of claim 44's preamble. The Court has already rejected this argument. In its IDS, Metrologic did not distinguish Ouchi for being unable to produce symbol character data only for consecutively different bar code symbols. Metrologic represented instead that Ouchi lacked the combination of qualities possessed by the Metrologic system, where one of those qualities was the inclusion of a processor that "sequentially detects and decodes a plurality of consecutively different bar code symbols and sequentially produces only symbol character data representative thereof." (App. of Exs. to Symbol's Br., Ex. 20 at 3.) Thus, in distinguishing over Ouchi, Metrologic did not disclaim an embodiment capable of decoding every bar code symbol and producing symbol character data only for consecutively different bar codes.

Symbol also cites to Metrologic's June 13, 1993 statement to the patent examiner that Heiman claimed a system "wholly incapable of operating in a mode in which only a plurality of consecutively different bar code symbols can be read." (App. of Exs. to Symbol's Br., Ex. 17 at 16.) For reasons already discussed, the Court rejects this argument. Attributing to this statement the significance that Symbol urges would have the effect of excluding the preferred embodiments, which clearly show that decoding occurs before comparison. *See, e.g.,* '971 Patent col. 18 ll. 14-17; col. 27 ll. 24-27; *see also* SanDisk Corp., 415 F.3d at 1285. In addition, Metrologic's summary statement regarding the Heiman system did not constitute a clear and unmistakable disavowal of claim scope. *See* Omega Eng'g, 334 F.3d at 1325-26.

Symbol further criticizes Metrologic's reliance on the preferred embodiments depicted in Figures 8A-E and 12A-E, which Symbol maintains were "effectively disclaimed" (Symbol's Rebuttal Br. 28), without also citing to Figure 13, which Symbol contends represents the true scope of claim 44. The Court has previously rejected Symbol's erroneous assertion that Figure 13 depicts a preferred embodiment. Figures 8A-E and 12A-E represent the only two embodiments taught in the '971 patent, *see* '971 Patent col. 4 l. 56 (referring to "the first illustrative embodiment"); col. 5 ll. 65-66 (referring to the "second illustrative embodiment"), and Figure 13 represents a "state diagram" applicable to both embodiments, *see* id. col. 5 l. 67-col. 6 l. 2. Without "highly persuasive evidentiary support," Vitronics, 90 F.3d at 1583, the Court declines to adopt a construction that would exclude both of Metrologic's preferred embodiments. Furthermore, even if the labeling of States C, D, and F in Figure 13 arguably suggests that "reading" is coextensive with "decoding," the Court will not use this inference as a basis for limiting the scan data processing means element of claim 44. *See* Applied Med. Res. Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1334 (Fed.Cir.2006) ("A court errs when it improperly imports unclaimed functions into a means-plus-function claim limitation.").

Symbol's sole remaining argument concerns the prosecution history relating to Metrologic's addition of the word "only." Symbol reads this word to "limit [ ] the function of the structure to producing character data (i.e., decoding) *only* for consecutively different bar code symbols in a mode of operation in which 'only a plurality of consecutively different bar code symbols on one or more objects can be read', as understood from the preamble." (Symbol's Br. 21 (citing '971 Patent col. 27 l. 68-col. 28 l. 13) (emphasis in original).) Symbol's proposed interpretation is inconsistent with the Court's definition of "read" in the preamble to claim 44. There, the Court defined "read" so as to recognize that decoding occurs before the comparison of consecutively scanned and decoded bar code symbols. *See* '971 Patent col. 18 ll. 8-20; col. 27 ll. 18-29; Fig. 8E (Block Y and Block Z); Fig. 12E (Block Y and Block Z). Once consecutive decoded bar codes symbols are compared, the reading system produces symbol character data only for consecutively different bar code symbols. *See, e.g.,* '971 Patent col. 34 ll. 52-57 (claiming a processing means that produces "symbol character data representative of a decoded symbol"). Thus, decoding is not synonymous with producing symbol character data. Symbol's interpretation of the scan data processing means turns the Court's definition

of "read" on its head, requiring bar code comparison to occur before decoding and equating decoding with the production of symbol character data.

Symbol's construction also changes the grammatical structure of the scan data processing means element. In the claim, the word "only" modifies "symbol character data." Id. col. 42 ll. 56-59 ("... for automatically producing only symbol character data representative of each one of said plurality of consecutively different bar code symbols ..."). However, Symbol insiststhat "only" actually modifies "consecutively different bar code symbols." (Symbol's Br. 21) ("... producing character data (i.e. decoding) *only* for consecutively different bar code symbols....") To overcome the plain language of the claim, Symbol contends that Metrologic added the word "only" during prosecution, following an interview with the patent examiner (App. of Exs. to Symbol's Br., Ex. 16 at 3 (depicting the handwritten insertion of the word "only" in pending claim 149, which ultimately issued as claim 44)), and speculates that the reason for this amendment was to distinguish over Boles and Heiman. Symbol's evidence is unpersuasive and falls well short of a clear and unmistakable disavowal of claim scope. Omega Eng'g, 334 F.3d at 1325-26. Similarly, it fails to overcome a plain reading of the claim element, in which "only" modifies "symbol character data." (*See* App. Exs. to Symbol's Rebuttal Br., Ex. 33 (Eastman Dep.) at 86:17-88:18 (interpreting the scan data processing means element of claim 44 as automatically producing only symbol character data).) Because the patent examiner who allowed this claim presumably understood basic rules of grammar, *see* In re Hyatt, 708 F.2d 712, 714 (Fed.Cir.1983) ("A claim must be read in accordance with the precepts of English grammar."), the Court will not rewrite the scan data processing means element of claim 44 so as to permit decoding only for consecutively different bar code symbols.

For the foregoing reasons, the Court rejects Symbol's proposed interpretation, and defines the function of the scan data processing means element of claim 44 as follows: "processing produced scan data in order to sequentially detect and decode bar code symbols, and automatically producing only symbol character data representative of each consecutively different bar code symbol."

b. Corresponding Structure

The parties further dispute the nature of the structures capable of performing the claimed function. Both parties agree that the corresponding structures are the bar code presence detection module 14 and the bar code symbol decoding module 16. *See* '971 Patent Fig. 4. However, Symbol contends that the specification discloses only a "programmed microprocessor, and structural equivalents." (Symbol's Br. 20.) Metrologic, on the other hand, contends that the corresponding structure may be implemented "either in a programmable processor or in a hardwired circuit and structural equivalents." (Metrologic's Br. 33.)

The specification explicitly teaches that the bar code presence detection module 14 and the bar code symbol decoding module 16 may be "realized using a single programmable device, such as a microprocessor." '971 Patent col. 8 ll. 12-14. In addition, "[i]t is understood ... that any of these elements can be realized using separate discrete components as will be apparent to those skilled in the art." Id. col. 8 ll. 15-18. Although the specification teaches that the bar code presence detection module 14 "[p]referably ... is realized as a microcode program carried out by the microprocessor and associated program and buffer memory," id. col. 11 ll. 53-56, this preferred embodiment does not limit the claim scope, *see* Tex. Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed.Cir.1986) ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification."). Symbol has produced no evidence showing that a person skilled in the art would not understand "separate discrete components" to include "a hard-wired circuit." Thus, finding confirmation in the language of the specification, the Court adopts Metrologic'sproposed definition of the corresponding structure.

For the reasons discussed, the Court construes the scan data processing means of claim 44 as follows: "a bar code presence detection module and a bar code symbol decoding module, either in a programmable

microprocessor or in a hard-wired circuit, and structural equivalents, for processing produced scan data in order to sequentially detect and decode bar code symbols, and automatically producing only symbol character data representative of each consecutively different bar code symbol."

5. Claim 44-Control Means

" *control means for automatically controlling the operation of said laser beam producing means and said scan data processing means so as to sequentially detect and decode each one of said plurality of consecutively different bar code symbols as said plurality of consecutively different bar code symbols are being sequentially scanned by said visible laser beam, and also to sequentially produce only symbol character data representative of each one of said plurality of consecutively different bar code symbols as said plurality of consecutively different bar code symbols are being sequentially detected and decoded by said scan data processing means*."
The parties agree that the control means element of claim 44 employs means-plus-function language. Having independently found that the language employs the term "means" and does not recite structure, the Court concludes that means-plus-function principles govern the construction of the control means element of claim 44.

a. Function

Both parties agree as to the essential function claimed and offer little elaboration on the express claim language. Having reviewed the claim language and the parties' interpretations, the Court construes the claimed function as follows: "automatically controlling the operation of the laser beam producing means and scan data processing means to sequentially detect and decode each one of said plurality of consecutively different bar code symbols as said plurality of consecutively different bar code symbols are being sequentially scanned by the visible laser beam, and to sequentially produce only symbol character data representative of each one of said plurality of consecutively different bar code symbols as said plurality of consecutively different bar code symbols are being sequentially detected and decoded by the scan data processing means."

b. Corresponding Structure

Metrologic interprets the corresponding structure as the system controller 22 depicted in Figure 4, and argues that this structure may be realized as a microprocessor or a hard-wired circuit. Symbol agrees that the structure must include the system controller 22, which may be implemented in a programmable microprocessor. However, Symbol also contends that the control logic, or algorithm, of system controller 22 must be included in the corresponding structure. According to Symbol, "[t]he only structure disclosed in the patent for 'automatically control[ling] the operation of said laser beam producing means', as recited in the claim, is [the] control logic of the system controller 22 that turns on the normally-off laser diode 54 in response to the presence of an object in the scan field." (Symbol's Br. 23 (footnote omitted).)

In the leading decision of WMS Gaming Inc. v. International Game Technology, 184 F.3d 1339 (Fed.Cir.1999), the Federal Circuit examined the role of algorithms in means-plus-function claim construction. In that case, the alleged infringed patent (the "Telnaes patent") claimed a gaming apparatus (slot machine), one limitation of which claimed a "means for assigning" a plurality of numbers to the stop positions on a rotating reel, where the plurality of numbers exceeds the number of stop positions and some of the stop positions are represented by more than one number. Id. at 1346, 1347. The parties stipulated that the Telnaes patent disclosed a microprocessor as the structure corresponding to the "means for assigning" limitation. They further stipulated that the algorithm that controlled the assignment of numbers was an algorithm illustrated in Figure 6 of the patent. The district court broadly construed the "means for assigning" limitation to include "any table, formula, or algorithm for determining correspondence between the [randomly selected] numbers and rotational positions of the reel." Id. at 1348.

[52] The Federal Circuit reversed, finding that the district court's construction of the "means for assigning" claim was overly broad. Specifically, the Federal Circuit court found that the district court "erred by failing to limit the claim to the algorithm disclosed in the specification." Id. Such limitation is necessary, the Federal Circuit explained, because

[a] general purpose computer, or microprocessor, programmed to carry out an algorithm creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software. The instructions of the software program that carry out the algorithm electrically change the general purpose computer by creating electrical paths within the device. These electrical paths create a special purpose machine for carrying out the particular algorithm.

Id. (internal quotation marks, citations, and footnote omitted). Thus, "[i]n a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm." Id. at 1349; *see also* Harris Corp. v. Ericsson Inc., 417 F.3d 1241, 1253 (Fed.Cir.2005) ("A computer-implemented means-plus-function term is limited to the corresponding structure disclosed in the specification and equivalents thereof, and the corresponding structure is the algorithm.").

Metrologic argues that WMS Gaming and Harris Corp. are inapplicable here because the flow charts depicted in the '971 patent are not algorithms, but are merely intended as a general guide for programming the microprocessor to implement the preferred embodiment. *See, e.g.,* '971 Patent col. 5 ll. 21-26 (describing Figures 8A-E as "a high level flow chart of a system control program (i.e., Main System Control Routine No. 1), illustrating various courses of programmed system operation that the automatic bar code symbol reading device of the illustrative embodiment may undergo"). However, in attempting to distinguish between a flow chart and an algorithm, Metrologic draws a false dichotomy. Numerous courts have recognized that a flow chart may graphically depict an algorithm. *See, e.g.,* Itron, Inc. v. Benghiat, 169 F.Supp.2d 1073, 1092 (D.Minn.2001) (finding that "the algorithms for performing the various functions described in each of the claims are explicitly disclosed in the patent's flow charts," and quoting David Bender, *Computer Law* s. 3.02(3) (2000), for the proposition that "the 'logic' or 'algorithm' of a computer program may involve the use of a flowchart 'wherein the logic of the program is depicted graphically by a sequence of oddly shaped boxes connected by lines and arrows, means to show the various processing steps and flow of data' "). Indeed, the Federal Circuit has broadly defined "algorithm" to include any " 'step-by-step procedure for solving a problem or accomplishing some end.' " In re Iwahashi, 888 F.2d 1370, 1374 (Fed.Cir.1989) (quoting *Webster's New Collegiate Dictionary* (1976)). It is therefore apparent that the "high level flow charts" disclosed in the '971 patent are indeed "algorithms."

Turning to the control means element in claim 44 of the '971 patent, there is no dispute that the structure corresponding to the claimed function is a programmable microprocessor. However, a programmable microprocessor cannot represent the extent of the structure because it "does not incorporate any disclosed algorithm." Harris Corp., 417 F.3d at 1254. Accordingly, the Court must construe the structure corresponding to the control means so as to include the algorithm corresponding to the claimed function, as construed above. This result accords with the claim constructions of several district courts that have held, in accordance with WMS Gaming, that when corresponding structure includes a "programmable microprocessor," it must also include an algorithm. *See, e.g.,* Network Appliance, Inc. v. Bluearc Corp., No. C 03-5665 MHP, 2005 WL 1530222, at *10-11 (N.D.Cal. June 27, 2005); Mallinckrodt, Inc. v. Masimo Corp., 254 F.Supp.2d 1140, 1152-53 (C.D.Cal.2003).

Symbol reads several limitations into the operation of the programmed microprocessor that find little basis

in the specification and contradict the Court's construction of other claim elements. For instance, Symbol contends that the microprocessor "turns on the laser beam producing means in response to the presence of an object in the scan field." (Symbol's Br. 22.) Because the Court has refused to limit the laser beam producing means of claim 44 to a normally-off visible laser diode, the Court declines to construe the control means as requiring the microprocessor to enable the laser beam producing means. Symbol also seeks to limit the microprocessor to controlling the scan data processing means "to only decode consecutively different bar code symbols even when the bar code symbol is removed from the scan field for a finite time." (*Id*.) For reasons discussed in construing the preamble to claim 44, the Court rejects this limitation as well. *See* '971 Patent col. 18 ll. 5-40; col. 27 ll. 15-29; *see also* Phillips, 415 F.3d at 1316.

Consequently, the Court construes the control means of claim 44 as follows: "a system controller, either in a hard-wired circuit or in a microprocessor programmed to carry out an algorithm in which the microprocessor automatically controls the operation of the laser beam producing means and scan data processing means to sequentially detect and decode each one of said plurality of consecutively different bar code symbols as said plurality of consecutively different bar code symbols are being sequentially scanned by the visible laser beam, and sequentially produces only symbol character data representative of each one of said plurality of consecutively different bar code symbols as said plurality of consecutively different bar code symbols are being sequentially detected and decoded by the scan data processing means."

6. Claim 46

" *The system of claim 44, wherein said bar code symbol has first and second envelope borders, and wherein said scan data processing means detects said bar code symbol by processing scan data so as to detect the first and second envelope borders of said bar code symbol*."
For the reasons discussed in connection with dependent claim 2 of the ' 698 patent, the Court finds that dependent claim 46 of the '971 patent is not a means-plus-function claim, but will construe the scan data processing means element of claim 46 in accordance with means-plus-function principles.

a. Function

As they did for the bar code symbol detection means element of claim 2 of the '698 patent, the parties dispute whether the scan data processing means element of claim 46 of the '971 patent detects a bar code symbol by detecting the white space comprising the first and second envelope borders at each end of a bar code symbol, or whether it detects a bar code symbol by identifying two different characteristics of a bar code symbol, such as length and white border minimums. For precisely the reasons discussed in connection with claim 2 of the '698 patent, the Court finds that the scan data processing means element of claim 46 performs the function of "detecting bar codes by processing produced scan data so as to detect the first and second envelope borders of the scanned bar code." The Court likewise continues to define "first and second envelope borders" as the "white space" that is necessary on each end of the bar code symbol.

b. Corresponding Structure

The Court previously construed the structure corresponding to the scan data processing means of claim 44 as "a bar code presence detection module and a bar code symbol decoding module, either in a programmable microprocessor or in a hard-wired circuit, and structural equivalents." The Court adheres to that definition here.

Accordingly, the Court construes dependent claim 46 as follows: "The system of claim 44, including a bar code presence detection module and a bar code symbol decoding module, either in a programmable microprocessor or in a hard-wired circuit, and structural equivalents, for detecting bar codes by processing produced scan data so as to detect the first and second envelope borders of the scanned bar code."

C. The '870 Patent

The parties' disputes with respect to the '870 patent are confined to claim 10. They dispute the following limitations: "system activation means," "scanning mechanism," "light detection means," "scan data processing means," and "control means."

1. Claim 10-System Activation Means

" *system activation means in said housing for producing an activation signal indicative of the presence of an object within at least a portion of a scan field definable external to said housing;* "
The parties agree that the system activation means element of claim 10 is a means-plus-function element. This element employs the term "means" and does not recite structure. Thus, the Court will interpret this element in accordance with means-plus-function principles of construction.

a. Function

[53] The parties propose widely divergent interpretations of the claimed function. Metrologic interprets the function as "producing an activation signal indicative of the presence of an object." (Metrologic's Br. 36.) According to Metrologic, the activation signal serves as an input to the system controller, causing it to transition from an object detection state to a bar code detection state.

By contrast, Symbol contends that the activation signal must activate otherwise deactivated system components, namely, the laser beam source, the laser beam directing means, and the scanning mechanism. Symbol finds support for this interpretation in the specification, as well as in a January 6, 1998 Supplemental Preliminary Amendment that Metrologic made to its then-pending claim. Consequently, Symbol interprets the claimed function as "non-manually producing an activation signal which indicates the presence of an object in the scan field ... such that the activation signal activates the laser beam source, laser beam directing means and scanning mechanism." (Symbol's Br. 25.)

Prior to the January 6, 1998 amendment, Metrologic's pending claim 6 claimed an "object detection means disposed in said housing for automatically detecting an object located within a portion of a scan field defined external to said housing." (App. of Exs. to Symbol's Br., Ex. 23 at 2.) On January 6, 1998, Metrologic amended its pending claim to recite a "system activation means in said housing for producing an activation signal indicative of the presence of an object within at least a portion of a scan field definable external to said housing." (Id. Ex. 24 at 6.) This amended claim language ultimately issued as the system activation means limitation of claim 10. Symbol argues that in order for this amendment to be meaningful, "the 'system activation means' must be more than just the object detection means" originally claimed, i.e., it "must perform the additional function of activating otherwise deactivated system components." (Symbol's Br. 26.)

There is no dispute that the January 6, 1998 Supplemental Preliminary Amendment added an express limitation requiring the production of an "activation signal" indicative of a detected object in the scan field. The dispute concerns the function that the activation signal performs. As noted, Metrologic contends that the activation signal causes the system controller to transition from object detection state to bar code detection state. Symbol complains that Metrologic fails to explain what this transition means, and notes that the specification expressly teaches that this transition enables previously disabled system components, such as the laser diode.

The specification teaches that the IR sensing circuit and the system controller are initially enabled, while "the remainder of the activatable system components, e.g., laser diode 50, scanning motor 53, photoreceiving circuit 18, A/D conversion circuit 15, bar code presence detection module 20, bar code scan data range detection module 21, symbol decoding module 22, data format conversion module 23, data

storage unit 24, and data transmission circuit 25," are disabled. '870 Patent col. 18 ll. 40-51. Upon receiving control activation signal A_1, "the system controller activates laser diode 50, scanning motor 53, photoreceiving circuit 18, A/D conversion circuit 19 and bar code presence detection module 20." Id. col. 18 l. 54-col. 19 l. 4; *see also* '870 Patent Fig. 7A (Block A-Block D). The specification states that these steps describe the operation of the system controller "with reference to system block diagram shown in FIG. 4, the intensity versus time characteristic shown in FIG. 6, and Blocks A to CC shown in FIGS. 7A and 7B." Id. col. 18 ll. 33-39.

As will be explained later in the discussion pertaining to the control means, the "high level flow chart" of Figures 7A and 7B represents an algorithm that constitutes part of the structure corresponding to the control means. As such, it is more than a mere preferred embodiment; it is a structural limitation of the claimed invention. WMS Gaming, 184 F.3d at 1349. Therefore, where the specification and Figure 7A teach that the activation signal causes the control means to activate (i.e., enable) the laser beam source, the laser beam directing means, and the scanning mechanism, this activation is a part of the claimed invention, and not merely one possible embodiment of the invention. By extension, the Court finds that Symbol's limitation "that the activation signal activates the laser beam source, laser beam directing means and scanning mechanism" does *not* represent the impermissible importation of a functional limitation from the preferred embodiment. Rather, Symbol's limitation on the system activation means is a necessary consequence of the disclosed algorithm comprising part of the structure corresponding to the control means. *See* Markman, 52 F.3d at 978 ("The patent is a fully integrated written instrument.").

Metrologic's proposed construction, while not incorrect, leaves the disputed term "activation signal" undefined. Because the "activation signal" limitation was added during prosecution, resolution of this dispute is imperative. Although Metrologic contends that the activation signal causes the system controller to transition from an object detection state to a bar code detection state, this functional limitation does not appear in Metrologic's proposed interpretation of the system activation means. Moreover, Metrologic cites to a portion of the specification referring to the transition between object detection state and bar code detection state. *See* '871 Patent col. 10 ll. 31-44. This portion of the specification expressly states that the transition "will be described in greater detail hereinafter," *id*. col. 10 ll. 39-40, thus incorporating by reference that portion of the specification on which Symbol relies to describe the activation of system components by control activation signal A_1. To resolve the disputed function of the activation signal, the Court must therefore consult the portion of the specification describing the operation of the algorithm claimed in the control means.

For the foregoing reasons, the Court construes the claimed function as follows: "producing an activation signal which indicates the presence of an object in at least a portion of the scan field, such that the activation signal causes the control means to activate the laser beam source, the laser beam directing means, and the scanning mechanism."

b. Corresponding Structure

Metrologic identifies the corresponding structure as being "[a]n object detection circuit for detecting objects, through IR or other optical radiation or acoustical energy, in a hard-wired circuit or structural equivalents." (Metrologic's Br. 36.) Symbol proposes essentially the same structure, but urges the Court to recognize the structural limitation that the corresponding structure does not include the scanning laser.

Symbol derives its proposed limitations from two sources. First, Symbol cites to the prosecution history of two of the '870 patent's ancestor patents. Second, Symbol cites the specification of the '870 patent itself. The Court considers Symbol's second argument first, and finds no need to reach Symbol's first argument.

Symbol points to various places in the specification where Metrologic appears to indicate that the object

detection means is separate from the visible laser diode. Some of Symbol's references are to preferred embodiments, *see, e.g.,* ' 870 Patent col. 9, ll. 15-25; col. 11, ll. 10-15; Fig. 4, and some are to descriptions of the operation of the control means algorithm, *see, e.g.,* id. col. 18 l. 40-col. 19 l. 5; col. 20 l. 42-col. 21 l. 2; Fig. 7A. Symbol urges the Court to read these statements as a limitation on the system activation means.

As discussed above, the disclosed algorithm requires that the system activation means produce an activation signal that causes the system controller to activate, among other components, the laser beam source. Because both parties agree that the structure corresponding to the system activation means includes "an object detection circuit" (Metrologic) or "object detection circuitry" (Symbol), the system activation means limitation must be construed, at the very least, to include an object detection circuit that produces an activation signal, which causes the system controller to activate the laser beam source. The algorithm teaches that the object detection circuit and system controller are continuously enabled, id. col. 18 ll. 42-44, while the laser diode is initially disabled, id. col. 18 ll. 44-46. If the function of the laser beam source is to produce a visible laser beam, as the parties agree that it is (*see* App. of Exs. to Symbol's Br., Ex. 8 at 8), then the laser beam source cannot perform this function until activated by the system controller. *See* '870 Patent col. 19 l. 1-2. Because control activation signal A_1 causes the system controller to activate the laser beam source, generation of control activation signal A_1 must precede the production of the laser beam by the laser beam source. It follows, then, that the visible laser beam produced by the laser beam source can play no part in the generation of control activation signal A_1. Where the parties agree that the object detection circuit produces an activation signal indicative of the presence of an object in the scan field, object detection cannot be performed by the laser beam produced by the laser beam source.

The Court is cognizant that the '870 patent broadly teaches that object detection can entail the detection of either "optical radiation or acoustical energy." '871 Patent col. 9 ll. 2-3. This would seemingly suggest that object detection may occur through the medium of reflected laser light. Inasmuch as the patent encompasses such embodiments, however, it does *not* claim any embodiment in which the object detection laser is also the scanning laser. The algorithm unequivocally teaches that the scanning laser is disabled during object detection, and is only enabled by the system controller in response to control activation signal A_1. Id. col. 18 l. 40-col. 19 l. 6.

Therefore, the Court finds that Symbol's proposed limitation that the activation signal be produced "without the use of the scanning laser beam" is a necessary consequence of the structural limitation introduced by the disclosed algorithm. For the reasons discussed, the Court construes the system activation means of claim 10 as follows: "an object detection circuit for detecting objects through IR or other optical radiation or acoustical energy, and its structural equivalents, for producing an activation signal which indicates the presence of an object in at least a portion of the scan field without the use of the scanning laser beam, such that the activation signal causes the control means to activate the laser beam source, the laser beam directing means, and the scanning mechanism."

2. Claim 10-Scanning Mechanism

" *a scanning mechanism in said housing for scanning said visible laser beam across said scan field and a bar code symbol on said object, during said bar code symbol detection mode and said bar code symbol reading mode, said scanned visible laser beam flickering in said scan field during said bar code symbol detection mode, at a rate below the critical flicker frequency of the user's human visual system so as to improve the visual conspicuousness of said visible laser beam in said scan field during said bar code symbol detection mode of operation;* "
In their opening claim construction briefs, both parties asserted that this claim should be construed according to its ordinary meaning. However, Symbol suggested the additional limitation that the phrase "critical flicker frequency" be defined as being between about 0.1 Hz and 16 Hz. Symbol also faulted

Metrologic for failing to acknowledge the recited purpose of flickering the laser beam, namely, to improve the visual conspicuousness of the beam in the scan field during bar code symbol detection mode. In its rebuttal brief, Metrologic waived any objection to Symbol's limitation that the critical flicker frequency be between about 0.1 Hz and 16 Hz, calling this difference "not material." (Metrologic's Rebuttal Br. 33.) At the *Markman* hearing in this case, Metrologic's counsel clarified that it was withdrawing any objection to Symbol's proposed construction of the scanning mechanism element of claim 10.

Accordingly, the Court adopts Symbol's proposed interpretation. The Court construes the scanning mechanism element of claim 10 as follows: "a scanning mechanism in the housing for scanning the visible laser beam across the scan field and a bar code symbol on an object during the bar code symbol detection mode and bar code symbol reading mode, where the laser beam flickers at a rate of between about 0.1 Hz and 16 Hz during the bar code symbol detection mode such that the laser beam has improved visual conspicuousness to a user during the bar code symbol detection mode."

3. Claim 10-Light Detection Means

" *light detection means in said housing, for detecting the intensity of laser light reflected off said scanned bar code symbol, and for automatically producing scan data indicative of the detected intensity of said reflected laser light;* "
The parties agree that the light detection means element of claim 10 is a means-plus-function element. After independently reviewing the claim language, the Court finds that this element employs the term "means" and does not recite structure. Thus, the Court will construe the light detection means element of claim 10 according to principles governing mean-plus-function claims.

a. Function

There is no dispute concerning the claimed function. Consistent with the plain language of the claim, *see* Phillips, 415 F.3d at 1316, as well as the constructions of the laser light detecting means elements of the '698 and ' 971 patents, the Court construes the light detection means element of the ' 870 patent as follows: "detecting the intensity of laser light reflected off of a scanned bar code symbol and automatically producing scan data indicative of the detected light intensity."

b. Corresponding Structure

As in the '698 patent and '971 patent, the parties dispute whether a photoreceiver is sufficient to carry out the claimed function of "automatically producing scan data indicative of the detected light intensity," or whether a preamplifier is also needed. The '870 patent teaches that upon receiving the laser light return signal reflected off of a bar code symbol, photoreceiver 56 generates "an analog signal which is subsequently amplified by preamplifier 58 to produce analog scan data signal D_1." '870 Patent col. 12 ll. 32-51; Fig. 4. The plain language of the claim element requires the production of "scan data," and this function is unfulfilled by the photoreceiveralone. Only the photoreceiver and the preamplifier, working in tandem, produce scan data (i.e., analog scan data signal D_1).

Accordingly, the Court finds that the corresponding structure is a photoreceiver and a preamplifier. The Court construes the light detection means element of claim 10 of the '870 patent as follows: "a photoreceiver and a preamplifier and their structural equivalents for detecting the intensity of laser light reflected off of a scanned bar code symbol and automatically producing scan data indicative of the detected light intensity."

4. Claim 10-Scan Data Processing Means

" *scan data processing means for processing produced scan data during said bar code symbol detection*

mode and said bar code symbol reading mode, so as to detect and decode said scanned bar code symbol on said detected object, and upon detecting and decoding said scanned bar code symbol, automatically producing symbol character data representative of said detected and decoded bar code symbol "
The parties agree that the scan data processing means element of claim 10 is a means-plus-function element. The Court independently finds that the language of this element employs the term "means" and does not recite structure. Thus, the Court will construe the scan data processing means element of claim 10 under means-plus-function principles.

a. Function

Metrologic interprets the claimed function as "processing scan data in order to sequentially detect and decode said bar code symbol and ... producing symbol character data representative of said detected and decoded bar code symbol." (Metrologic's Br. 38.) Symbol does not dispute this function, but insists that the construction must also specify that bar code detection be performed during the bar code symbol detection mode, and that bar code decoding be performed during bar code symbol reading mode.

There is no dispute that the limitation claims two primary functions: "processing" and "automatically producing." The function of "processing" in turn serves "to detect and decode" a scanned bar code symbol, and the claim language plainly teaches that processing occurs "during said bar code symbol detection mode and said bar code symbol reading mode." '870 Patent col. 32 ll. 41-42. It does not, however, expressly teach that bar code detection be performed during the bar code symbol detection mode, and bar code decoding be performed during the bar code symbol reading mode. Symbol's only support for this limitation, apart from its own flawed reading of the claim limitation, is its citation to unpersuasive language in the specification describing the operation of the preferred embodiment. Because a court may not infer claim limitations from a preferred embodiment, Tex. Instruments, 805 F.2d at 1563, the Court declines to adopt a construction in which decoding must occur in a mode separate from detection.

The Court construes the claimed function as follows: "processing scan data during the bar code symbol detection mode and the bar code symbol reading mode so as to detect and decode said scanned bar code symbol, and automatically producing symbol character data representative of said detected and decoded bar code symbol."

b. Corresponding Structure

Metrologic contends that the corresponding structure is a programmable microprocessoror a hard-wired circuit and their structural equivalents. Symbol interprets the corresponding structure as a programmed microprocessor and structural equivalents. The specification teaches a programmable microprocessor implementing a number of modules, such as a symbol decoding module, and expressly contemplates that any of these modules "may be realized using separate discrete components as will be readily apparent to those with ordinary skill in the art." '870 Patent col. 10 ll. 1-10. Symbol does not suggest that a person skilled in the art would not understand that a "separate discrete component[ ]" could be a hard-wired circuit. Therefore, the Court adopts Metrologic's interpretation of the corresponding structure.

Accordingly, the Court construes the scan data processing means limitation of claim 10 as follows: "a programmable microprocessor or a hard-wired circuit, and their structural equivalents, for processing scan data during the bar code symbol detection mode and the bar code symbol reading mode so as to detect and decode said scanned bar code symbol, and for automatically producing symbol character data representative of said detected and decoded bar code symbol."

5. Claim 10-Control Means

" *control means for controlling the operation of said bar code symbol reading system*."

The control means element of claim 10 employs the term "means" and does not recite structure. Accordingly, the Court concludes that this element is a means-plus-function element, to be construed accordingly.

a. Function

The parties do not dispute the claimed function. Adhering to the plain language of the claim, the Court finds that the control means limitation of claim 10 claims the function of "controlling the operation of said bar code symbol reading system."

b. Corresponding Structure

Metrologic contends that the system controller 28 is the corresponding structure, and that it may be implemented in a programmable microprocessor or a separate hard-wired circuit. Symbol does not disagree with Metrologic on this point, but contends that the corresponding structure must also include the algorithm disclosed in the patent for controlling the system components.

As discussed in connection with the control means limitation of claim 44 of the '971 patent, the Court rejects Metrologic's argument that the "high level flow chart" of Figures 7A and 7B is not an algorithm. There is no practical distinction between an "algorithm," as the Federal Circuit has defined that term, *see* In re Iwahashi, 888 F.2d at 1374, and a "flow chart." *See* Itron, Inc., 169 F.Supp.2d at 1092. The Federal Circuit's instruction is clear: a district court errs when it construes the corresponding structure of a means-plus-function claim as a general purpose microprocessor without including the disclosed algorithm. Harris Corp., 417 F.3d at 1253; WMS Gaming, 184 F.3d at 1349. Therefore, the corresponding structure must include the algorithm disclosed in Figures 7A and 7B.

The Court finds that the control means of claim 10 shall be construed as follows: "a hardwired circuit or a microprocessor programmed to carry out an algorithm which controls the operation of said bar code symbol reading system." The operation of the bar code symbol reading system shall be defined with reference to the Court's constructions for the various disputed limitations of claim 10, as discussed above.

IV. Conclusion

The Court renders the foregoing findings of law in anticipation of a jury trial on the question of infringement, scheduled to commence on November 28, 2006.

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