

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
TYLER DIVISION**

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NANOLOGY ALPHA LLC,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Case No. 6:16-CV-00445-RWS
	§	
WITEC WISSENSCHAFTLICHE	§	
INSTRUMENTE UND	§	
TECHNOLOGIE GmbH,	§	
	§	
Defendant.	§	
	§	

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**MEMORANDUM OPINION AND ORDER**

On September 13, 2017, the Court held a hearing to determine the proper construction of the disputed claim terms in United States Patent No. 5,756,997 (“the ’997 Patent”). The Court has considered the arguments made by the parties at the hearing and in their claim construction briefs. Docket Nos. 40, 44, & 49.<sup>1</sup> The Court has also considered the intrinsic evidence and made subsidiary factual findings about the extrinsic evidence. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The Court issues this Claim Construction Memorandum and Order in light of these considerations.

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<sup>1</sup> Citations to the parties’ filings are to the filing’s number in the docket (Docket No.) and pin cites are to the page numbers assigned through ECF.

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## **I. BACKGROUND**

### **A. The '997 Patent**

The '997 Patent, filed on March 4, 1996 and issued on May 26, 1998, is titled “Scanning Probe/Optical Microscope with Modular Objective/Probe and Drive/Detector Units.” The specification states that the disclosed microscope includes a “microscope stand to support the object, a modular objective/probe unit, a modular drive/detector unit, and an optical observation head.” '997 at Abstract. The specification further states that “[t]he modular objective/probe unit is removably attached to the microscope stand and comprises a probe with a cantilever and a tip on the cantilever.” Id. The specification adds that the microscope “comprises a movement mechanism attached to the cantilever to move the cantilever so that the tip is moved over the object,” and “further comprises objective optics.” Id.

The specification then states that “[t]he modular detector unit is removably attached to the microscope stand and comprises detection optics optically coupled to the objective optics.” Id. The specification adds that “[t]he detection optics direct deflection detecting light to the objective optics which focus the deflection detecting light on the cantilever so that the cantilever reflects the deflection detecting light as the tip is moved over the object.” Id. The specification further states that the “objective optics direct the reflected deflection detecting light to the detection optics so that the detection optics detects the reflected deflection detecting light for measuring the deflection of the cantilever as the tip is moved over the object.”

The specification next discloses that “[t]he optical observation head comprises image forming optics optically coupled to the objective optics,” and that “[t]he image forming optics direct object observing light to the objective optics which focus the object observing light on the object so that the object reflects the object observing light.” The specification concludes that “[t]he objective optics direct the reflected object observing light to the image forming optics so that the

image forming optics focus the reflected object observing light to form an image of the object for observation.”

Claim 1 of the '997 Patent is an exemplary claim and recites the following elements (disputed term in italics):

1. A scanning probe/optical microscope for inspecting an object, the scanning probe/optical microscope comprising:
  - a microscope stand to support the object;
  - a modular objective/probe unit that are removably attachable to the microscope stand, the modular objective/probe unit comprising:
    - a probe comprising a cantilever and a tip on the cantilever;
    - a movement mechanism attached to the cantilever to move the cantilever so that the tip is moved over the object; and
  - objective optics;
  - a modular detector unit that is separate from the modular objective/probe unit, is removably attachable to the microscope stand, and comprises detection optics; and
  - an optical observation head comprising image forming optics;wherein when the object is being inspected with the modular objective/probe unit,
  - (a) the modular detector unit and the modular objective/probe unit are attached to the microscope stand so that the detection optics and the imaging forming optics are both optically coupled to the objective optics,
  - (b) the detection optics directs deflection detecting light to the objective optics, the objective optics focusing the deflection detecting light on the cantilever so that the cantilever reflects the deflection detecting light as the tip is moved over the object, the objective optics directing the reflected deflection detecting light to the detection optics so that the detection optics detects the reflected deflection detecting light for measuring the deflection of the cantilever as the tip is moved over the object;
  - (c) the image forming optics directs object observing light to the objective optics, the objective optics focusing the object observing light on the object so that the object reflects the object observing light, the objective optics directing the reflected object observing light to the image forming optics so that the image forming optics focuses the reflected object observing light to form an image of the object for observation.

## II. APPLICABLE LAW

### A. Claim Construction

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’ ” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) (“There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.”) (vacated on other grounds).

“The claim construction inquiry. . . begins and ends in all cases with the actual words of the claim.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998). “[I]n all aspects of claim construction, ‘the name of the game is the claim.’ ” *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)). First, a term’s context in the asserted claim can be instructive. *Phillips*, 415 F.3d at 1314. Other asserted or unasserted claims can also aid in determining the claim’s meaning, because claim terms are typically used consistently throughout the patent. *Id.*

Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’ ” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’ ” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). But, “ ‘[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.’ ” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); see also *Phillips*, 415 F.3d at 1323. “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004).

The prosecution history is another tool to supply the proper context for claim construction because, like the specification, the prosecution history provides evidence of how the U.S. Patent and Trademark Office (“PTO”) and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. However, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* at 1318; see also *Athletic*

*Alternatives, Inc. v. Prince Mfg.*, 73 F.3d 1573, 1580 (Fed. Cir. 1996) (ambiguous prosecution history may be “unhelpful as an interpretive resource”).

Although extrinsic evidence can also be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.* The Supreme Court recently explained the role of extrinsic evidence in claim construction:

In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. See, e.g., *Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be “so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning”). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the “evidentiary underpinnings” of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.

*Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

**B. Functional Claiming and 35 U.S.C. § 112 ¶ 6 (pre-AIA) / § 112(f) (AIA)<sup>2</sup>**

A patent claim may be expressed using functional language. See 35 U.S.C. § 112 ¶ 6; *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). Section 112, Paragraph 6, provides that a structure may be claimed as a “means . . . for performing a specified function” and that an act may be claimed as a “step for performing a specified function.” *Masco Corp. v. United States*, 303 F.3d 1316, 1326 (Fed. Cir. 2002).

But § 112 ¶ 6 does not apply to all functional claim language. There is a rebuttable presumption that § 112 ¶ 6 applies when the claim language includes “means” or “step for” terms, and that it does not apply in the absence of those terms. *Masco Corp.*, 303 F.3d at 1326; *Williamson*, 792 F.3d at 1348. The presumption stands or falls according to whether one of ordinary skill in the art would understand the claim with the functional language, in the context of the entire specification, to denote sufficiently definite structure or acts for performing the function. See *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (Section 112 ¶ 6 does not apply when “the claim language, read in light of the specification, recites sufficiently definite structure”) (quotation marks omitted) (citing *Williamson*, 792 F.3d at 1349; *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014)); *Williamson*, 792 F.3d at 1349 (Section 112 ¶ 6 does not apply when “the words of the claim are understood by persons of ordinary skill in the art to have sufficiently definite meaning as the name for structure”); *Masco Corp.*, 303 F.3d at 1326 (Section 112 ¶ 6 does not apply when the claim includes an “act” corresponding to “how the function is performed”); *Personalized Media Communications, L.L.C. v. International Trade Commission*, 161 F.3d 696, 704 (Fed. Cir. 1998) (Section 112 ¶ 6 does not

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<sup>2</sup> Because the application resulting in the '997 Patent was filed before September 16, 2012, the effective date of the America Invents Act (“AIA”), the Court refers to the pre-AIA version of § 112.

apply when the claim includes “sufficient structure, material, or acts within the claim itself to perform entirely the recited function . . . even if the claim uses the term ‘means.’ ” (quotation marks and citation omitted).

When it applies, § 112 ¶ 6 limits the scope of the functional term “to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof.” *Williamson*, 792 F.3d at 1347. Construing a means-plus-function limitation involves multiple steps. “The first step . . . is a determination of the function of the means-plus-function limitation.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). “[T]he next step is to determine the corresponding structure disclosed in the specification and equivalents thereof.” *Id.* A “structure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” *Id.* The focus of the “corresponding structure” inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is “clearly linked or associated with the [recited] function.” *Id.* The corresponding structure “must include all structure that actually performs the recited function.” *Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). However, § 112 does not permit “incorporation of structure from the written description beyond that necessary to perform the claimed function.” *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

For § 112 ¶ 6 limitations implemented by a programmed general purpose computer or microprocessor, the corresponding structure described in the patent specification must include an algorithm for performing the function. *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). The corresponding structure is not a general purpose computer but rather

the special purpose computer programmed to perform the disclosed algorithm. *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

### III. CONSTRUCTION OF AGREED TERMS

The parties agreed to the construction of the following phrase:

Claim Term/Phrase	Agreed Construction
“support structure to support the object”  ('997 Patent, Claim 5, Claims 6, 9, and 10 by reference to Claim 5, and Claims 7 and 8 by reference to Claim 6)	“the portion of the microscope stand where the object to be supported is placed”

Docket No. 50-1 at 33. In view of the parties’ agreement on the construction of the identified phrase, the Court **ADOPTS** the parties’ agreed constructions.

Before the claim construction hearing, the parties agreed that the following phrase does not require construction:

Claim Term/Phrase	Agreed Construction
“wherein when the object is being inspected” / “when the object is being inspected”  ('997 Patent, Claims 1, 5)	No construction necessary.

Docket Nos. 44 at 10, 49 at 7. In view of the parties’ agreement, the Court will not construe the phrase “wherein when the object is being inspected” / “when the object is being inspected.”

During the claim construction hearing, the parties agreed that the following terms/phrases should be given their plain and ordinary meaning:

Claim Term/Phrase	Agreed Construction
“microscope stand”  ('997 Patent, Claims 1, 2, 5, 6)	Plain and ordinary meaning.

<p>“the drive/measure circuitry driving the movement mechanism to move the cantilever and the detection optics to provide the deflection detecting light”</p> <p>(’997 Patent, Claim 2)</p>	<p>Plain and ordinary meaning. The term is not subject to § 112 ¶ 6.</p>
<p>“the drive/measure circuitry driving the movement mechanism ... to move the cantilever and the detection optics to provide the deflection detecting light”</p> <p>(’997 Patent, Claim 6)</p>	<p>Plain and ordinary meaning. The term is not subject to § 112 ¶ 6.</p>
<p>“focusing the deflection detecting light on the cantilever so that the cantilever reflects the deflection detecting light as the tip is moved over the object”</p> <p>(’997 Patent, Claim 1)</p>	<p>Plain and ordinary meaning.</p>
<p>“measuring the deflection of the cantilever as the tip is moved over the object”</p> <p>(’997 Patent, Claim 1)</p>	<p>Plain and ordinary meaning.</p>

Regarding the term “**microscope stand,**” the Court agrees that the term is unambiguous, is easily understandable by a jury, and should be given its plain and ordinary meaning. Claim 1 recites that the scanning probe/optical microscope comprises “a microscope stand to support the object.” Claim 1 further recites that components such as the modular objective/probe unit and modular detector unit are “removably attachable to the microscope stand.” Thus, the claim language indicates that the term is used consistent with its plain and ordinary meaning. Similarly, the specification states that “[t]he microscope 100 comprises a standard optical microscope stand that includes a support structure 105 and a nosepiece 106. The support structure supports the object 102 and the other components of the microscope including the nosepiece. The nosepiece is rotatably attached to the support structure.” ’997 Patent at 2:60–65. Like the claims, the

specification indicates that the term “microscope stand” is used consistent with its plain and ordinary meaning. Accordingly, the Court agrees that the term should be given its plain and ordinary meaning.

Defendant originally argued that the specification states that “[t]he microscope 100 comprises a standard optical microscope stand that includes a support structure 105 . . . [which] . . . supports the object 102 and the other components of the microscope...” Docket No. 44 at 4 (citing ’997 Patent at 2:60–63). Defendant argued that this is a critical part of the specification. Docket No. 44 at 5. The Court disagrees that this one sentence from the specification should be read into the claims. Instead, the specification indicates that this language is describing a preferred embodiment. See, e.g., ’997 Patent at 2:49–51 (“Referring to FIG. 1[,] there is shown one embodiment of a combined scanning probe/optical microscope 100 for inspecting an object 102.”) (emphasis added). “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004). Defendant does not point to anything in the intrinsic evidence that provides a clear indication that the patentee intended to limit the claims to this embodiment. *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. Feb. 1, 2012) (“We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.”).

The Court also finds that Defendant’s original construction was redundant, unnecessary, and would have confused the jury. For example, claim 1 recites that the scanning probe/optical microscope comprises “a microscope stand to support the object.” It is unnecessary to repeat that it is a support structure for the object. Likewise, claim 1 recites that the scanning probe/optical

microscope comprises “a microscope stand to support the object,” and that components such as the modular objective/probe unit and modular detector unit are “removably attachable to the microscope stand.” Again, it would be unnecessary to repeat that it is a support structure for components of the microscope.

Finally, claim 5 recites “a microscope stand comprising: a support structure to support the object.” It would be confusing and redundant to construe the microscope stand as “a support structure for . . . the object . . . comprising: a support structure to support the object.” Defendant originally argued that its construction clarified that SPM microscopes function differently from standard optical microscopes, which do not perform a scan of the object with a probe. Docket No. 44 at 5. The claim language and specification is clear on this difference. Furthermore, Defendant’s original construction did not provide any further clarity on this difference. Accordingly, the Court **ADOPTS** the parties’ agreed construction of plain and ordinary meaning.

Regarding the phrase “**the drive/measure circuitry driving the movement mechanism to move the cantilever and the detection optics to provide the deflection detecting light,**” the Court agrees that the term should be given its plain and ordinary meaning. The parties originally disputed whether the phrase was subject to § 112 ¶ 6. There is a rebuttable presumption that § 112 ¶ 6 does not apply because the claim does not recite the word “means.” The intrinsic evidence further demonstrates that a person of ordinary skill in the art would understand the necessary structure of the “drive/measure circuitry.” The Federal Circuit has repeatedly held that “circuitry” connotes structure to those in the electronic arts in the context of the § 112(6) analysis. *Mass. Inst. of Tech. and Elecs. for Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1355-56 (Fed. Cir. 2006); *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320-21 (Fed. Cir. 2004); *Apex Inc. v. Raritan Comp., Inc.*, 325 F.3d 1364, 1374 (Fed. Cir. 2003).

Here, the claims indicate that the “drive/measure circuitry” is included in the detector unit, which is attached to the microscope stand along with the objective/probe unit. The claims further indicate that “drive/measure circuitry” functions as a circuit that drives “the movement mechanism to move the cantilever and the detection optics to provide the deflection detecting light.” The claims further indicate that the drive/measure circuitry measures “the deflection of the cantilever from the reflected deflection detecting light detected by the detection optics.” Thus, the “drive/measure circuitry” connotes structure to a person of ordinary skill in the art.

The written description further supports the conclusion that the claimed “drive/measure circuitry” is not a purely functional limitation. The written description indicates that the “drive/measure circuitry” is physically located within the modular drive/detector unit. The specification also indicates that the “drive/measure circuitry” drives the movement mechanism to moves the cantilever and the detection optics to provide the deflection detecting light, and measures the deflection of the cantilever from the reflected deflection detecting light detected by the detection optics. *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003) (“While we do not find it necessary to hold that the term ‘circuit’ by itself always connotes sufficient structure, the term ‘circuit’ with an appropriate identifier such as ‘interface,’ ‘programming’ and ‘logic,’ certainly identifies some structural meaning to one of ordinary skill in the art.”).

For example, the specification states that “[t]he drive/detector unit comprises drive/measure circuitry 122 that is electrically coupled to the stationary electrical contact structure and to a control system of the microscope.” ’997 Patent at 3:13–16. The specification further states that “the drive/measure circuitry drives the modular objective/probe unit’s XYZ translator 114 to move the cantilever 110 during an SPM scan. As a result, the tip 112 is moved over the

object to perform the SPM scan.” Id. at 3:20–25. The specification also states that “the drive/measure circuitry measures the deflection of the cantilever 110 and provides a signal representing this deflection to the control system over the cable 114 so that the control system can use it in the manner described earlier.” Id. at 4:2–6. Thus, the claims and the specification describes the objectives and operation of the “drive/measure circuitry.” *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004) (“The contextual language describes the objective of the ‘circuit,’ ‘monitoring a signal from the output terminal,’ and the desired output of the ‘circuit,’ ‘generating a first feedback signal.’”). In addition, the written description further indicates that the “drive/measure circuitry” conveys structure to a person or ordinary skill in the art. Specifically, Figure 1 illustrates the “drive/measure circuitry” physically connected to light source 128 and light detector 136.

Defendant originally argued that a bare recitation of “circuitry” without sufficient operational details fails to connote structure. Docket No. 44 at 12. Defendant contended that *Linear Tech* is distinguishable because the court relied on the claim language of “a first circuit for monitoring a signal from the output terminal to generate a first feedback signal” as connoting structure. Id. The Court is not persuaded by Defendant’s attempt to distinguish *Linear Tech*. First, the claims include the meaningful descriptor of “drive/measure circuitry,” which is not a “bare recitation of ‘circuitry,’ ” as Defendant contended. Id. Analogous to the claim language in *Linear Tech*, both the claim language and specification describes the objectives and operation of the “drive/measure circuitry.”

Moreover, Defendant’s original construction did not provide further clarity as it suggested. Instead, it replaced “drive/measure circuitry” with “electric circuit,” which would have provided less description than the recited “drive/measure circuitry.” In sum, the claims and written

descriptions indicated that the claimed “drive/measure circuitry” is not a means-plus-function limitation. Accordingly, the Court **ADOPTS** the parties’ agreed construction of plain and ordinary meaning.

Regarding the phrase **“the drive/measure circuitry driving the movement mechanism . . . to move the cantilever and the detection optics to provide the deflection detecting light,”** the Court agrees that the term should be given its plain and ordinary meaning. The parties agree that the phrase is substantively the same as the phrase **“the drive/measure circuitry driving the movement mechanism to move the cantilever and the detection optics to provide the deflection detecting light”** discussed above, except for the slightly different grammatical structure. Docket Nos. 44 at 14, 49 at 8. For the reasons discussed above, the Court agrees that the phrase is not subject to § 112 ¶ 6, and should be given its plain and ordinary meaning. Accordingly, the Court **ADOPTS** the parties’ agreed construction of plain and ordinary meaning.

Regarding the phrase **“focusing the deflection detecting light on the cantilever so that the cantilever reflects the deflection detecting light as the tip is moved over the object,”** the Court agrees that the phrase is unambiguous, is easily understandable by a jury, and should be given its plain and ordinary meaning. Defendant’s original construction unnecessarily redrafted the claim to make it redundant and imported unwarranted limitations into the claim. *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1364 (Fed. Cir. 1999) (“Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee.”). Defendant’s original construction deleted the phrase “so that the cantilever reflects the deflection detecting light,” and redrafted it as “detecting reflected deflection detecting light from the cantilever as the cantilever tip is moved over the object.” This would have improperly added a “detecting” requirement to the “focusing” term. Moreover, it would have been redundant because claim 1 recites that “the detection optics detects

the reflected deflection detecting light for measuring the deflection of the cantilever as the tip is moved over the object.”

Defendant’s original construction also unnecessarily inserted “cantilever” in front of “tip.” Claim 1 includes the limitation of “a probe comprising a cantilever and a tip on the cantilever.” This provides antecedent basis for “the tip” recited later in the claim. Similarly, Defendant’s original construction rewrote “the object” as “the object to be inspected.” This is unnecessary because claim 1 recites “wherein when the object is being inspected,” and the “focusing” term is part of element (b) that follows the wherein clause. Finally, Defendant’s original construction also included “by the XYZ translator.” The “XYZ translator” is one embodiment, and Defendant’s original construction would have improperly imported this embodiment into the claim. Accordingly, the Court **ADOPTS** the parties’ agreed construction of plain and ordinary meaning.

Regarding the phrase “**measuring the deflection of the cantilever as the tip is moved over the object,**” the Court agrees that the phrase is also unambiguous, is easily understandable by a jury, and should be given its plain and ordinary meaning. Defendant’s original construction unnecessarily redrafted the claim in a way that was redundant and imported unwarranted limitations into the claim. See K-2 Corp. at 1364. Defendant’s original construction unnecessarily inserted “cantilever” in front of “tip.” Claim 1 includes the limitation of “a probe comprising a cantilever and a tip on the cantilever.” This provides antecedent basis for “the tip” recited later in the claim. Defendant’s original construction also included “by the XYZ translator.” The “XYZ translator” is one embodiment, and Defendant’s original construction would have improperly imported this embodiment into the claim. Accordingly, the Court **ADOPTS** the parties’ agreed construction of plain and ordinary meaning.

#### IV. CONSTRUCTION OF DISPUTED TERMS

The parties' dispute focuses on the meaning of two phrases in the '997 Patent.

**A. “movement mechanism ... to move the cantilever so that the tip is moved over the object” and “movement mechanism ... moves the cantilever ... so that the tip ... is moved over the object”**

<u>Disputed Term</u>	<u>Plaintiff's Proposal</u>	<u>Defendants' Proposal</u>
“movement mechanism ... to move the cantilever ... so that the tip ... is moved over the object”	No construction necessary. If construed, the term is not subject to § 112 ¶ 6 and means “a mechanical or electromechanical movement moves the cantilever so that the tip is moved over the object”	The term is subject to § 112 ¶ 6 “an XYZ translator (Ref. No. 114) attached to cantilever to move the cantilever and the cantilever tip during SPM scan.”
“movement mechanism ... moves the cantilever ... so that the tip ... is moved over the object”	No construction necessary. If construed, the term is not subject to § 112 ¶ 6 and means “a mechanical or electromechanical movement moves the cantilever so that the tip is moved over the object”	The term is subject to § 112 ¶ 6 “an XYZ translator (Ref. No. 114) attached to cantilever to move the cantilever [and the cantilever tip] over the object during SPM scan”

##### 1. The Parties' Positions

The parties agree that the phrases are substantively the same, except for the slightly different grammatical structure. Docket Nos. 44 at 9, 49 at 7. The parties dispute whether the phrases are subject to § 112 ¶ 6. Plaintiff contends that its construction is supported by the specification. Docket No. 40 at 11 (citing '997 Patent at 2:18–19). Plaintiff argues that the claim term should not be limited to the particular embodiment of an XYZ translator. Docket No. 40 at 11. Plaintiff further argues that its construction is also supported by extrinsic evidence. *Id.* (citing Docket No. 40-3 at 4). Plaintiff contends that the movement mechanism in claim 1 is attached to the cantilever and the cantilever has a tip, and consequently moving the cantilever will move the tip. Docket No. 40 at 12 (citing '977 Patent at 7:4–6). Plaintiff argues that the Court should reject Defendant's position that this term is subject to § 112 ¶ 6. According to Plaintiff, the presumption is not rebutted in this case, and the term “movement mechanism” connotes structure in the context

of microscopes. Docket No. 40 at 12 (citing Docket No. 40-4 at 6).

Defendant responds that it is generally accepted that “mechanism” is a generic term which provides no more structure than “means.” Docket No. 44 at 7. According to Defendant, “the movement mechanism” fails to recite sufficiently definite structure and merely recites function without reciting sufficient structure for performing that function. *Id.* Defendant argues that without such structural language, the term should be subject to means plus function treatment. *Id.* Defendant further contends that an XYZ translator is the only structure mentioned for “the movement mechanism.” *Id.* at 8 (citing ’997 Patent at 3:20–25). Defendant argues that its construction is necessary to clarify the confusion which arises as to the interpretation of the claim as drafted. Defendant also argues that clarification of the term “during SPM scan” is necessary to clarify that the “movement mechanism” moves the tip over the object for making SPM measurements. Docket No. 44 at 8.

Defendant also contends that Plaintiff’s construction is amendable to inconsistent interpretations. *Id.* According to Defendant, it is not clear from the claim language, or Plaintiff’s construction as to at what point the cantilever is moved over the object. *Id.* Defendant argues that under Plaintiff’s construction, the movement could be while the sample is being placed on the stand, or during some other period. *Id.* Defendant further argues that the extrinsic evidence relied upon by Plaintiff does not describe a scanning probe microscope, and that the passages are not in reference to the scanning of an object by a scanning probe or combination optical/scanning probe microscope. *Id.* at 8-9 (referring to Docket No. 40-3). Regarding the passage Plaintiff cited for the fine adjustment method of the optical compound microscope, Defendant contends that this would appear to conflict with the subsequent language in claim 1, and would appear to conflict with the language in the specification. Docket No. 44 at 9 (citing at ’997 Patent at 7:16–31).

Plaintiff replies that Defendant fails to overcome the presumption that a claim term that does not use “means” is not subject to § 112 ¶ 6. Docket No. 49 at 5. Plaintiff further argues that Defendant’s assertion that the presumption against the application of § 112 ¶ 6 is overcome because the ’997 Patent lacks a recitation of structure is flawed. *Id.* Plaintiff contends that Defendant ignores that the dictionary definition of “movement” connotes structure, as in “the working parts or a distinct portion of the working parts of a mechanism.” *Id.* (citing Docket No. 40-4 at 6). Plaintiff further argues that the movement mechanism does not have to be specifically related to scanning probe microscopy, as Defendant contends. Docket No. 49 at 5. According to Plaintiff, the relevant fact is whether movement mechanisms were known structural elements to one of ordinary skill in the art. *Id.*

Plaintiff also argues that Defendant’s argument that the case law suggests that “mechanism” is not structural misses the point. *Id.* at 6. Plaintiff contends that the word “movement” connotes structure, particularly when used in connection with “mechanism,” as the dictionary definition of “movement” demonstrates. *Id.* (citing Docket No. 40-4). Plaintiff argues that “[m]ovement mechanism [attached to the cantilever] to move the cantilever so that the tip is moved over the object” does not require a construction. Docket No. 49 at 6. Plaintiff further argues that if construed, the term is not subject to § 112 ¶ 6 and means “a mechanical or electro-mechanical movement device [attached to the cantilever] to move the cantilever so that the tip is moved over the object.” *Id.* at 6-7.

For the following reasons, the Court finds that the phrase **“movement mechanism ... to move the cantilever so that the tip is moved over the object”** and the phrase **“movement mechanism ... moves the cantilever ... so that the tip ... is moved over the object”** are not governed by 35 U.S.C. § 112 ¶ 6, and should be given their plain and ordinary meaning.

## 2. Analysis

The phrase “movement mechanism ... to move the cantilever so that the tip is moved over the object” appears in asserted claim 1 of the ’997 Patent. The phrase “movement mechanism ... moves the cantilever ... so that the tip ... is moved over the object” appears in asserted claim 5 of the ’997 Patent. The Court finds that the terms are not subject to § 112 ¶ 6. It is well settled that [a] claim limitation that actually uses the word ‘means’ invokes a rebuttable presumption that § 112 [¶] 6 applies.” *Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1371 (Fed. Cir. 2003) (quotation omitted). It is also equally understood that “a claim term that does not use ‘means’ will trigger the rebuttable presumption that § 112 [¶] 6 does not apply.” *Id.* at 1371 (quotation omitted). The presumption against the application of § 112 ¶ 6 may be overcome if a party can “demonstrate[] that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’ ” *Williamson*, 792 F.3d 1339 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). “In undertaking this analysis, we ask if the claim language, read in light of the specification, recites sufficiently definite structure to avoid § 112 ¶ 6.” *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014) (citing *Inventio AG v. Thyssenkrupp Elevator Ams. Corp.*, 649 F.3d 1350, 1357 (Fed. Cir. 2011)).

Here, there is a rebuttable presumption that § 112 [¶] 6 does not apply because the claims do not recite the word “means.” Furthermore, the intrinsic evidence demonstrates that a person of ordinary skill in the art would understand the necessary structure of the “movement mechanism.” The preamble of the claims 1 and 5 recites “[a] scanning probe/optical microscope for inspecting an object, the scanning probe/optical microscope comprising.” Claim 1 further recites that the scanning microscope includes “a probe comprising a cantilever and a tip on the cantilever,” and

that the “movement mechanism” is “coupled to the cantilever” and “moves the cantilever of the selected one of the modular objective/probe units so that the tip of the selected one of the modular objective/probe units is moved over the object.” Similarly, claim 5 recites that the scanning microscope includes “a probe comprising a cantilever and a tip on the cantilever” and that the “movement mechanism” is “attached to the cantilever to move the cantilever so that the tip is moved over the object.” Thus, the claims not only describe the structural elements, but also recite the interaction between the structural elements. The term “moving mechanism” therefore imparts structure and its structure is described in the claims. *Envirco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1365 (Fed. Cir. 2000) (holding that when a term itself imparts structure and its structure is described in the claim, the term is not a means-plus-function limitation).

Furthermore, the specification includes examples of the claimed “movement mechanism” that would be well understood as structure by a person of ordinary skill in the art. For example, the specification states that in one embodiment “each modular objective/probe unit 108 comprises an XYZ translator (i.e., movement mechanism) 114 and an SPM probe formed by a cantilever 110 and a tip 112 on the cantilever.” ’997 Patent at 3:1–5. The specification further states that “the drive/measure circuitry drives the modular objective/probe units XYZ translator 114 to move the cantilever 110 during an SPM scan. As a result, the tip 112 is moved over the object to perform the SPM scan.” *Id.* at 3:21–25. These examples show that “movement mechanism” has an “understood meaning in the art” as structure, and thus is not subject to § 112 ¶ 6 construction. See *Chrimar Sys. v. ADTRAN, Inc.*, 2016 U.S. Dist. LEXIS 79555, \*38 (E.D. Tex June 17, 2016) (“Where a claim term has an understood meaning in the art, it recites sufficient structure.”). As explained in E2E, § 112 ¶ 6 does not apply when the written description provides context as to how the claimed components “interact[] with other components . . . in a way that . . . inform[s] the

structural character of the limitation-in-question or otherwise impart[s] structure.” E2E Processing, Inc. v. Cabela's Inc., 2015 U.S. Dist. LEXIS 86060, \*20 (E.D. Tex. July 2, 2015) (Payne, M.J.) (quoting Williamson, 792 F. 3d at 1351).

Defendant argues that “it is generally accepted that ‘mechanism’ is a generic term which provides no more structure than ‘means.’ ” Docket No. 44 at 7 (citing Welker v Bearing Co. v. PHD Inc., 550 F.3d 1090 (Fed. Cir. 2008)). Defendant errs by focusing on the word “mechanism” in isolation from the broader language and requirements of the claim. The claims do not recite only a “mechanism,” but instead recite a “movement mechanism.” The Federal Circuit highlighted the importance of this distinction in Welker Bearing. Specifically, the court noted that the claim only recited a “mechanism,” and that “[n]o adjective endows the claimed ‘mechanism’ with a physical or structural component.” Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1096 (Fed. Cir. Dec. 15, 2008). The Court added that “[i]f claim 1 of the ’254 patent had recited, e.g., a ‘finger displacement mechanism,’ a ‘lateral projection/retraction mechanism,’ or even a ‘clamping finger actuator,’ this court could have inquired beyond the vague term ‘mechanism’ to discern the understanding of one of skill in the art. If that artisan would have understood such language to include a structural component, this court's analysis may well have turned out differently.” Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1096-1097 (Fed. Cir. Dec. 15, 2008).

Moreover, the court distinguished Greenberg v. Ethicon Endo–Surgery, Inc., 91 F.3d 1580 (Fed. Cir. 1996) by stating that “in [Greenberg] this court held that paragraph 6 did not apply to the term ‘detent mechanism,’ because ‘the noun ‘[d]etent’ denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms.’ ” Id. at 1096 (quoting Greenberg, 91 F.3d at 1583). By focusing solely on the word “mechanism,” Defendant ignores the structural requirements elsewhere in the claims that connote

structure.

During the claim construction hearing, Defendant argued that *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344 (Fed. Cir. 2006), is an example of when an adjective is insufficient to remove a term from being subject to § 112 ¶ 6. As discussed above, it is Defendant's burden of proving that the terms are subject to § 112 ¶ 6. The Court in MIT concluded that the patentee used "mechanism" and "means" as synonyms. MIT, at 1354 ("Here the patentee used 'mechanism' and 'means' as synonyms."). In contrast to MIT, the Court in this case does not find that the patentee used "movement mechanism" synonymous with "means."

Moreover, the Court in MIT determined that "colorant selection mechanism" was not defined in the specification and had no dictionary definition, and there was no suggestion that it has a generally understood meaning in the art. *Id.* Defendant argues that the adjective "movement" does nothing but repeat functional language. What is important is not simply that a "detent" or "detent mechanism" is defined in terms of what it does, but that the term, as the name for structure, has a reasonably well understood meaning in the art. *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. Aug. 8, 1996). Accordingly, the Court finds that Defendant has failed to "demonstrate[] that the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Williamson*, 792 F.3d 1339 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)).

### 3. Court's Construction

The phrases "**movement mechanism ... to move the cantilever so that the tip is moved over the object**" and "**movement mechanism ... moves the cantilever ... so that the tip ... is moved over the object**" are not governed by 35 U.S.C. § 112 ¶ 6, and will be given their plain and ordinary meaning.

**V. CONCLUSION**

The Court adopts the constructions above for the disputed and agreed terms of the Asserted Patent. Furthermore, the parties should ensure that all testimony that relates to the terms addressed in this Order is constrained by the Court's reasoning. However, in the presence of the jury the parties should not expressly or implicitly refer to each other's claim construction positions and should not expressly refer to any portion of this Order that is not an actual construction adopted by the Court. The references to the claim construction process should be limited to informing the jury of the constructions adopted by the Court.

**So ORDERED and SIGNED this 30th day of November, 2017.**

  
ROBERT W. SCHROEDER III  
UNITED STATES DISTRICT JUDGE