

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

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THOMAS SWAN & CO. LTD.,	§	
	§	
<i>Plaintiff,</i>	§	
	§	
v.	§	Civil Action No. 2:13-cv-00178-JRG
	§	
FINISAR CORP., et al.,	§	
	§	
<i>Defendants.</i>	§	

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**MEMORANDUM OPINION AND ORDER**

On May 30, 2014, the Court held a hearing to determine the proper construction of the disputed claim terms in United States Patent Nos. 8,335,033 (“the ’033 patent”); 8,089,683 (“the ’683 patent”); 7,664,395 (“the ’395 patent”); and 7,145,710 (“the ’710 patent”) (collectively, the “patents-in-suit”). After considering the arguments made by the parties at the hearing and in the parties’ claim construction briefing (Dkt. Nos. 124, 135, 139, 151 and 156), the Court issues this Claim Construction Memorandum and Order.

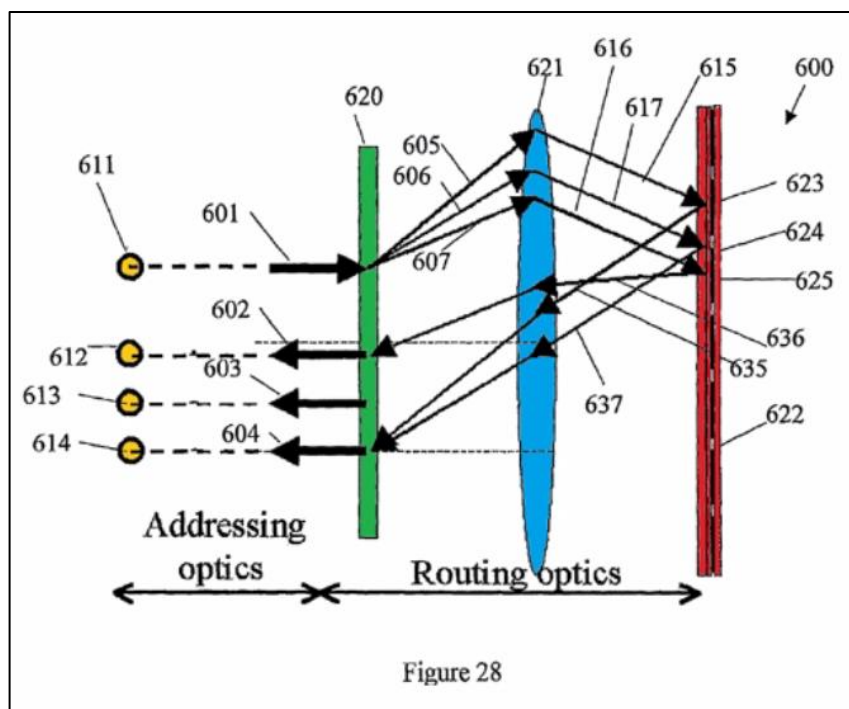
**I. BACKGROUND**

The patents-in-suit are titled “Optical Processing” and generally relate to the architecture and operation of an optical switch, such as the one shown in Figure 28.<sup>1</sup>

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<sup>1</sup> The Abstract of the ’710 Patent follows:

To operate an optical device comprising an SLM with a two-dimensional array of controllable phase-modulating elements groups of individual phase-modulating elements are delineated, and control data selected from a store for each delineated group of phase-modulating elements. The selected control data are used to generate holograms at each group and one or both of the delineation of the groups and the selection of control data is/are varied. In this way upon illumination of the groups by light beams, light beams emergent from the groups are controllable independently of each other.



The specification describes that the switch uses a dispersion device 620 (shown in green), a focusing element 621 (shown in blue), and a Spatial Light Modulator (“SLM”) 622 (shown in red), arranged in a folded architecture. ’710 Patent at 43:41–43.

The specification states that the SLM 622 “may be a multiple phase liquid crystal over silicon spatial light modulator having plural pixels, of a type having an integrated wave plate and a reflective element, such that successive passes of a beam through the liquid crystal subject each orthogonally polarised component to a substantially similar electrically-set phase change.” *Id.* at 7:1–6. The specification describes that the dispersion element 620 splits the multi-wavelength beam 601 into single wavelength beams 605, 606, 607, which are directed by the focusing element 621 to respective pixel groups 623, 624, 625 on the SLM 622. *Id.* at 43:49–60. The specification further states that the different pixel groups of the SLM display respective phase modulating patterns, known as holograms, which provide routing and other processing functions for the reflected beams 635, 636, 637. *Id.* The specification adds that these functions may include multiplexing/demultiplexing, filtering, attenuation, or monitoring. *Id.* at 43:61–44:33.

The specification states that the processed beams are then routed back to the grating 620 via the focusing element 621, where they are combined and directed to one of the outputs 612-614. *Id.* at 43:55–63. Accordingly, the specification describes an optical switch that can route, add/drop, filter, and attenuate multiple wavelengths independently using holograms displayed on the SLM.

Plaintiff brings suit alleging infringement of 132 claims across the patents-in-suit. Claims 1 and 20 of the '395 Patent are representative of the asserted claims and recite the following elements (disputed terms in italics):

1. An optical routing module having at least one input and at least one output and operable to select between the outputs, the or each input receiving a respective light beam having an ensemble of different channels, the module comprising:
  - a *Spatial Light Modulator (SLM)* having a two dimensional array of *pixels*,
  - a *dispersion device* disposed to receive light from said at least one input and constructed and arranged to disperse light beams of different frequencies in different directions whereby different channels of said ensemble are incident upon respective different groups of the *pixels* of the *SLM*, and circuitry constructed and arranged to display *holograms* on the *SLM* to determine the channels at respective outputs.
  
20. The optical routing module of claim 1, further comprising a control device operable to delineate groups of individual phase-modulating elements; to select, from stored *control data*, *control data* for each group of phase-modulating elements; to generate from the respective selected *control data* a respective hologram at each group of phase-modulating elements; and to vary at least one of the delineation of the groups and the selection of *control data* whereby upon illumination of said groups by respective light beams, respective emergent light beams from the groups are controllable independently of each other.

## 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, Page 3

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. See *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. See *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. Courts give claim terms their 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 entire patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* 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. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own

terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex, Inc.*, 299 F.3d at 1325. 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. The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent.").

Although extrinsic evidence can 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

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