

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

FINISAR CORP.,  
Petitioner,

v.

THOMAS SWAN & CO. LTD.,  
Patent Owner.

---

Case IPR2014-00461  
Patent 7,664,395 B2

---

Before SALLY C. MEDLEY, MICHELLE R. OSINSKI, and  
BARBARA A. PARVIS, *Administrative Patent Judges*.

OSINSKI, *Administrative Patent Judge*.

DECISION

Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

### A. Background

Finisar Corp. (“Petitioner”) filed a corrected Petition (Paper 5, “Pet.”) requesting an *inter partes* review of claims 1-27 of U.S. Patent No. 7,664,395 B2 (Ex. 1001, “the ’395 patent”). Thomas Swan & Co. Ltd. (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Upon consideration of the Petition and Preliminary Response, we determine that there is a reasonable likelihood that Petitioner would prevail with respect to claims 1-27 of the ’395 patent. Accordingly, we institute an *inter partes* review of claims 1-27 of the ’395 patent.

### B. Related Proceedings

The parties represent that the ’395 patent is the subject of a district court proceeding in *Thomas Swan & Co. Ltd. v. Finisar Corp.*, Case No. 2:13-cv-178 (E.D. Tex.). Pet. 4; Patent Owner’s Mandatory Notices Under 37 C.F.R. § 42.8, Paper 7, 2.

Petitioner filed additional petitions for *inter partes* review of three other patents related to the ’395 patent, namely, U.S. Patent Nos. 7,145,710 B2; 8,089,683 B2; and 8,335,033 B2. Prelim. Resp. 3-4; *See* IPR2014-00460 (Papers 2, 5); IPR2014-00462 (Papers 1, 5); IPR2014-00465 (Papers 1, 5).

C. The '395 Patent

The '395 patent relates to optical routing modules or devices that are configured to perform wavelength routing and selection. Ex. 1001, 42:5-8, 60:5-62:35. Figure 28 of the '395 patent is reproduced below.

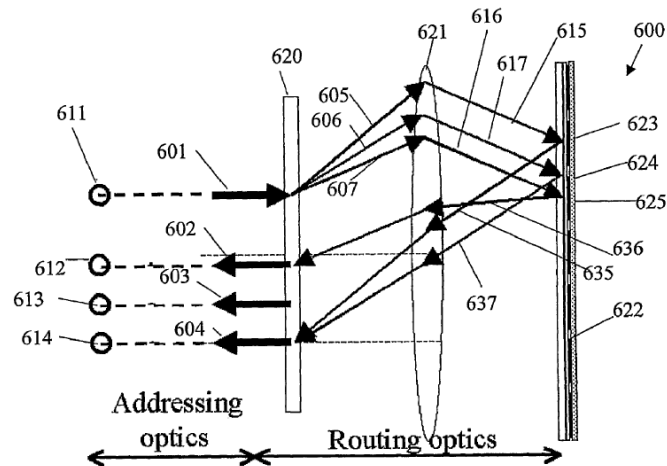


Figure 28

Figure 28 of the '395 patent illustrates wavelength routing and selection device 600

Figure 28 depicts a schematic diagram of an optical module or device that enables beams of different wavelengths from input beam 601 to be controlled separately before recombination. *Id.* at 10:53-56, 11:22-23. Device 600 provides three outputs 602, 603, 604 at output ports 612, 613, 614. *Id.* at 42:5-8. Input beam 601 contains an ensemble of channels at different wavelengths entering on same input port 611. *See id.* at 38:29-31.

Input beam 601 is incident on dispersion device 620, which is constructed to disperse light beams of different wavelengths (or different frequencies) in different directions. *Id.* at 42:17-27. For example, dispersion device 620 splits input beam 601 into three single wavelength emergent beams 605, 606, 607, corresponding to different channels of input

beam 601. *Id.* at 43:45-53, 42:17-27. Dispersion device 620 is placed in the focal plane of lens 621 that refracts wavelength beams 605, 606, 607 so that they emerge mutually parallel from lens 621 as wavelength beams 615, 616, 617, respectively. *Id.* at 42:17-27, 43:52-53.

Device 600 further includes spatial light modulator (“SLM”) 622 comprising a two-dimensional array of pixels. *Id.* at 11:19-24, 42:9-16. The two-dimensional array of pixels of SLM 622 are arranged into multiple groups 623, 624, 625 of pixels. *Id.* at 11:43-55, 43:55-44:7. Each of wavelength beams 615, 616, 617 is incident upon respective group 623, 624, 625 of pixels. *Id.* at 43:53-55. Each group 623, 624, 625 is capable of displaying a respective hologram that provides a different controllable deviation from the specular direction to control the angle at which each beam reflects from SLM 622 as reflected beams 635, 636, 637. *Id.* at 11:43-55, 43:55-44:7. The holograms on which each of the respective wavelength beams 615, 616, 617 lands determine to which output port 612, 613, 614 the corresponding wavelength channel is directed. *Id.* at 42:28-40. Each wavelength channel is thus controllably and independently routed to the desired output port. *Id.* at 42:32-53. Device 600 can route, add/drop, filter, and attenuate multiple wavelengths independently. *Id.*

#### *D. Illustrative Claim*

Claim 1 is illustrative of the claimed subject matter and is reproduced below.

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.

*E. Prior Art Relied Upon in the Petition*

Michael C. Parker, Dynamic Holograms for Wavelength Division Multiplexing (Nov. 1996) (Ph.D. dissertation, University of Cambridge) (on file with Cambridge University Library) (“Parker Thesis,” Ex. 1005).

Stephen T. Warr, Free-Space Switching for Optical Fibre Networks (July 1996) (Ph.D. dissertation, University of Cambridge) (on file with Cambridge University Library) (“Warr Thesis,” Ex. 1006).

Kim L. Tan, Dynamic Holography Using Ferroelectric Liquid Crystal on Silicon Spatial Light Modulators (Feb. 1999) (Ph.D. dissertation, University of Cambridge) (on file with Cambridge University Library) (“Tan Thesis,” Ex. 1007).

Crossland et al., US 2001/0050787 A1, (published Dec. 13, 2001) (“Crossland,” Ex. 1008).

*F. The Asserted Grounds of Unpatentability*

The information presented in the Petition sets forth Petitioner’s contentions of unpatentability of claims 1-27 of the ’395 patent based on the following specific grounds.

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.