

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUJITSU NETWORK COMMUNICATIONS, INC.,
Petitioner,

v.

CAPELLA PHOTONICS, INC.,
Patent Owner.

Case IPR2015-00727
Patent RE42,678 E

Before JOSIAH C. COCKS, KALYAN K. DESHPANDE, and
JAMES A. TARTAL, *Administrative Patent Judges*.

TARTAL, *Administrative Patent Judge*.

DECISION

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

I. INTRODUCTION

Petitioner, Fujitsu Network Communications, Inc., filed a Petition requesting an *inter partes* review of claims 1–4, 9, 10, 13, 17, 19–23, 27, 29, 44–46, 53 and 61–65 of U.S. Patent No. RE42,678 E (“the ’678 patent”). Paper 1 (“Pet.”). Patent Owner, Capella Photonics, Inc., filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Upon consideration of the Petition and the Preliminary Response, we conclude the information presented shows there is a reasonable likelihood that Petitioner would prevail in showing the unpatentability of the challenged claims. Accordingly, we authorize an *inter partes* review to be instituted as to claims 1–4, 9, 10, 13, 17, 19–23, 27, 29, 44–46, 53 and 61–65 of the ’678 patent. Our factual findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far (prior to Patent Owner’s Response). This is not a final decision as to patentability of claims for which *inter partes* review is instituted. Our final decision will be based on the record, as fully developed during trial.

II. BACKGROUND

A. *The ’678 patent (Ex. 1001)*

The ’678 patent, titled “Reconfigurable Optical Add-Drop Multiplexers with Servo Control and Dynamic Spectral Power Management Capabilities,” reissued September 6, 2011, from U.S. Patent No. RE 39,397

(“the ’397 patent”). Ex. 1001. The ’397 patent reissued November 14, 2006, from U.S. Patent No. 6,625,346 (“the ’346 patent”). *Id.* The ’346 patent issued September 23, 2003, from U.S. Patent Application No. 09/938,426, filed August 23, 2001.

The ’678 patent describes a “wavelength-separating-routing (WSR) apparatus that uses a diffraction grating to separate a multi-wavelength optical signal by wavelength into multiple spectral characters, which are then focused onto an array of corresponding channel micromirrors.” *Id.* at Abstract. “The channel micromirrors are individually controllable and continuously pivotable to reflect the spectral channels into selected output ports.” *Id.* According to Petitioner, the small, tilting mirrors are sometimes called Micro Electro Mechanical Systems or “MEMS.” Pet. 6. The WSR described in the ’678 patent may be used to construct a dynamically reconfigurable optical add-drop multiplexer (“ROADM”) for wavelength division multiplexing (“WDM”) optical networking applications. Ex. 1001, Abstract.

Figure 1A of the ’678 patent is reproduced below.

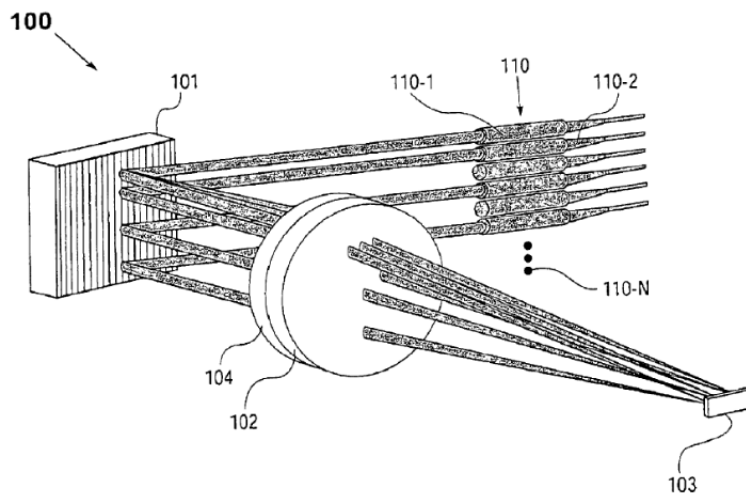


Fig. 1A

Figure 1A depicts WSR apparatus 100, in accordance with the '678 patent. WSR apparatus 100 is comprised of an array of fiber collimators 110 (multiple input/output ports, including input port 110-1 and output ports 110-2 through 110-N), diffraction grating 101 (a wavelength separator), quarter wave plate 104, focusing lens 102 (a beam-focuser), and array of channel micromirrors 103. Ex. 1001, 6:57–63, 7:55–56.

A multi-wavelength optical signal emerges from input port 110-1 and is separated into multiple spectral channels by diffraction grating 101, which are then focused by focusing lens 102 into a spatial array of distinct spectral spots (not shown). *Id.* at 6:64–7:2. Channel micromirrors 103 are positioned such that each channel micromirror receives one of the spectral channels. *Id.* at 7:2–5.

The WSR may also incorporate a servo-control assembly (together termed a “WSR-S apparatus.”) *Id.* at 4:65–67. According to the '678 patent:

The servo-control assembly serves to monitor the power levels of the spectral channels coupled into the output ports and further provide control of the channel micromirrors on an individual basis, so as to maintain a predetermined coupling efficiency of each spectral channel in one of the output ports. As such, the servo-control assembly provides dynamic control of the coupling of the spectral channels into the respective output ports and actively manages the power levels of the spectral channels coupled into the output ports.

Id. at 4:47–56.

B. Illustrative Claims

Claims 1, 21, 44, and 61 of the '678 patent are independent. Claims 2–4, 9, 10, 13, 17, 19, and 20 ultimately depend from claim 1; claims 22, 23,

27, and 29 ultimately depend from claim 21; claims 45, 46, and 53 ultimately depend from claim 44; and, claims 62–65 ultimately depend from claim 61. Claims 1, 21, and 61 of the '678 patent are illustrative of the claims at issue:

1. A wavelength-separating-routing apparatus, comprising:
 - a) multiple fiber collimators, providing an input port for a multi-wavelength optical signal and a plurality of output ports;
 - b) a wavelength-separator, for separating said multi-wavelength optical signal from said input port into multiple spectral channels;
 - c) a beam-focuser, for focusing said spectral channels into corresponding spectral spots; and
 - d) a spatial array of channel micromirrors positioned such that each channel micromirror receives one of said spectral channels, said channel micromirrors being *pivotal about two axes and being individually and continuously controllable to reflect [[said]] corresponding received spectral channels into any selected ones of said output ports and to control the power of said received spectral channels coupled into said output ports.*

Ex. 1001, 14:6–23 (“[[]]” indicating matter in the first reissue that forms no part of the second reissue, and matter in italics indicating additions made by second reissue).

21. A servo-based optical apparatus comprising:
 - a) multiple fiber collimators, providing an input port for a multi-wavelength optical signal and a plurality of output ports;
 - b) a wavelength-separator, for separating said multi-wave-length optical signal from said input port into multiple spectral channels;

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