

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0214074 A1 Maniloff et al.

Jun. 27, 2024 (43) **Pub. Date:**

(54) OPTICAL DELAY CALIBRATION OF **OPTICAL MODULES**

(71) Applicant: Ciena Corporation, Hanover, MD (US)

(72) Inventors: Eric S. Maniloff, Woodlawn (CA); Sebastien Gareau, Ottawa (CA); Benard J. Rhody, Ottawa (CA)

(21) Appl. No.: 18/087,004

Dec. 22, 2022 (22) Filed:

Publication Classification

(51) Int. Cl. H04B 10/43 (2006.01)(2006.01) H04B 10/524

(52) U.S. Cl. CPC H04B 10/43 (2013.01); H04B 10/524 (2013.01)

ABSTRACT (57)

An optical module includes a transmitter assembly; a receiver assembly; and circuitry connected to the transmitter assembly and the receiver assembly, wherein the circuity is configured to, responsive to a test of delay in one or more of the transmitter assembly and the receiver assembly, store a delay value for one or more of the transmitter assembly and the receiver assembly, and, responsive to a query of the delay, provide the stored delay value for each of the transmitter assembly and the receiver assembly. The circuitry can be further configured to perform the test of delay via inserting an event that is used for timing detection at a corresponding receiver assembly.

