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Jayaraman et al.(10) **Pub. No.: US 2024/0214246 A1**(43) **Pub. Date: Jun. 27, 2024**(54) **LOOKUP TABLE OPTIMIZATION FOR
HIGH SPEED TRANSMIT FEED-FORWARD
EQUALIZATION LINK**(52) **U.S. Cl.**CPC *H04L 25/03038* (2013.01); *H04L 25/4917*
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ABSTRACT(72) Inventors: **Pradeep Jayaraman**, San Jose, CA
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ULC, Markham (CA)(21) Appl. No.: **18/086,960**(22) Filed: **Dec. 22, 2022****Publication Classification**(51) **Int. Cl.***H04L 25/03* (2006.01)
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A driver circuit includes a feed-forward equalization (FFE) circuit. The FFE circuit receives a plurality of pulse-amplitude modulation (PAM) symbol values to be transmitted at one of multiple PAM levels. The FFE circuit includes a first partial lookup table, one or more additional partial lookup tables, and an adder circuit. The first partial lookup table contains partial finite impulse-response (FIR) values and indexed based on a current PAM symbol value, a precursor PAM symbol value, and a postcursor PAM symbol value. The one or more additional partial lookup tables each contain partial FIR values and indexed based on a respective additional one or more of the PAM symbol values. The adder circuit adds results of lookups from the first partial lookup table and the additional partial lookup tables to produce an output value.

