US 20220368342A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2022/0368342 A1

Abbasfar (43) Pub. Date: Nov. 17, 2022

(54) **LOW OVERHEAD TRANSITION ENCODING CODES**

(71) Applicant: **Samsung Display Co., Ltd.**, Yongin-si (KR)

(72) Inventor: **Aliazam Abbasfar**, San Jose, CA (US)

(21) Appl. No.: **17/389,146**

(22) Filed: **Jul. 29, 2021**

Related U.S. Application Data

(60) Provisional application No. 63/185,190, filed on May 6, 2021.

Publication Classification

(51) **Int. Cl.**

H03M 5/12	(2006.01)
H03M 13/00	(2006.01)

(52) **U.S. Cl.**

CPC ***H03M 5/12*** (2013.01); ***H03M 13/6502*** (2013.01)

(57) **ABSTRACT**

A processing circuit configured to: receive original data; partition the original data into a plurality of original q-bit words; assemble a data packet including N original q-bit words from the plurality of original q-bit words; identify a first encoder value and a second encoder value that are absent from the values of the N original q-bit words; encode the N original q-bit words based on a one-to-one mapping from q-bit original values to q-bit encoded values based on the first encoder value and the second encoder value to generate N encoded q-bit payload words, the N encoded q-bit payload words being free of words that are all-zeroes and free of words that are all-ones; generate a key representing the first encoder value and the second encoder value; and transmit the key and the N encoded q-bit payload words.