



US 20240223211A1

(19) **United States**

(12) **Patent Application Publication**
NAKANISHI et al.

(10) **Pub. No.: US 2024/0223211 A1**

(43) **Pub. Date: Jul. 4, 2024**

(54) **CONVERSION DEVICE, MEMORY SYSTEM,
DECOMPRESSION DEVICE, AND METHOD**

(71) Applicant: **Kioxia Corporation**, Tokyo (JP)

(72) Inventors: **Keiri NAKANISHI**, Kawasaki
Kanagawa (JP); **Masato SUMIYOSHI**,
Yokohama Kanagawa (JP); **Sho**
KODAMA, Yokohama Kanagawa (JP)

(21) Appl. No.: **18/536,057**

(22) Filed: **Dec. 11, 2023**

(30) **Foreign Application Priority Data**

Jan. 4, 2023 (JP) 2023-000242

Publication Classification

(51) **Int. Cl.**
H03M 7/40 (2006.01)
H03M 7/30 (2006.01)

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

CPC **H03M 7/4093** (2013.01); **H03M 7/3077**
(2013.01); **H03M 7/3088** (2013.01); **H03M**
7/6005 (2013.01); **H03M 7/6011** (2013.01);
H03M 7/6023 (2013.01)

(57)

ABSTRACT

According to one embodiment, a conversion device includes a demultiplexer, first to Nth extractors and a deinterleave unit. The demultiplexer extracts first to Nth substreams from a first compressed stream. The first to Nth substreams are placed in order in the first compressed stream and include first variable-length codes to Nth variable-length codes into which first symbols to Nth symbols of a symbol string have been converted. The first to Nth extractors extract the first variable-length codes to the Nth variable-length codes from the first to Nth substreams. The deinterleave unit reorders the first variable-length codes to the Nth variable-length codes in accordance with the symbol string and outputs a second compressed stream.

