

# AMI and HDB1 Line Codes - VHDL Implementation.

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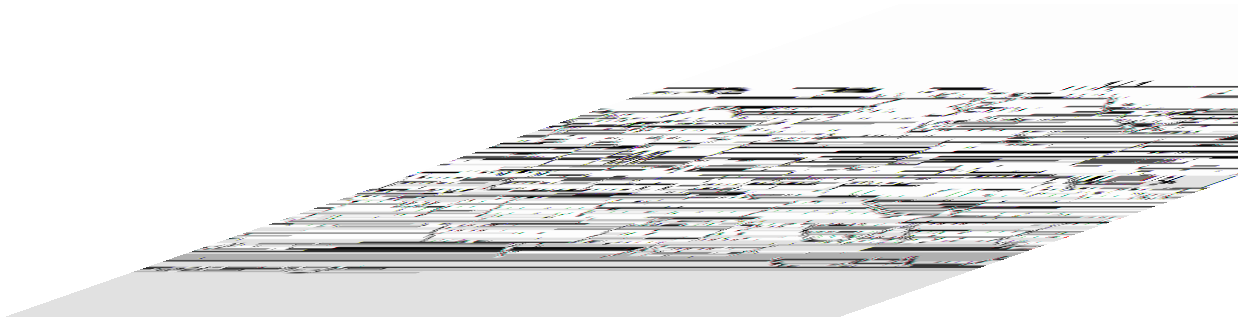
## Abstract

Line codings are methods for coding digital data for making them less susceptible to signal losses during transmission. This project implements the AMI — Alternate Mark Inverse — and HDB1 — High Density Bipolar of order 1 codings. This le documents their implementation.

## 1 Specification.

AMI. This coding takes a binary sequency into a ternary sequency having the signals 0, +1, -1 by the following way:

## 2 AMI Encoder.



## 4 HDB1 Encoder.

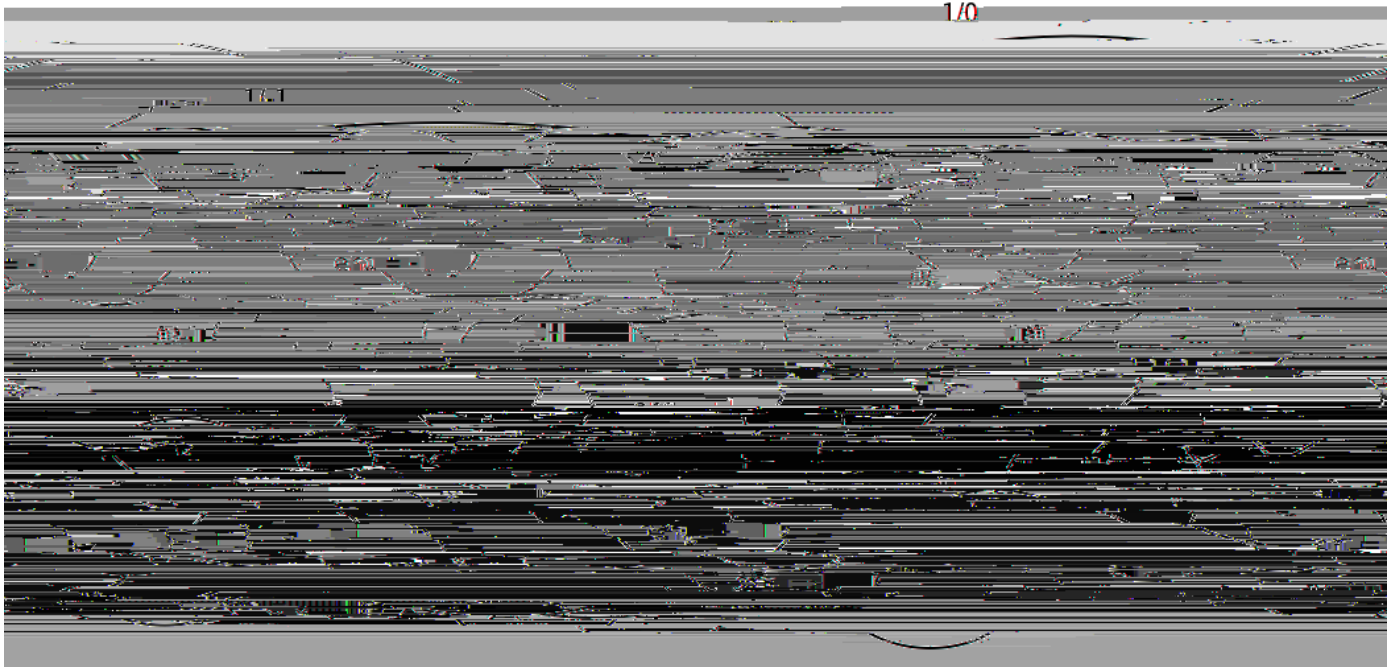


Figure 3: State Map.

Truth Table:

| $E$ | $q_0$ | $q_1$ | $q_{22q}$ |
|-----|-------|-------|-----------|
|-----|-------|-------|-----------|

$$q_2^+ = E^\dagger.q_2$$

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