

# TP02: Pipelined Encoded Variable Waterstream

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## Features

- $O(n)$  insertion time with 10BPS waterstream.
- 16gt throughput
- Pipelined for parallelization.

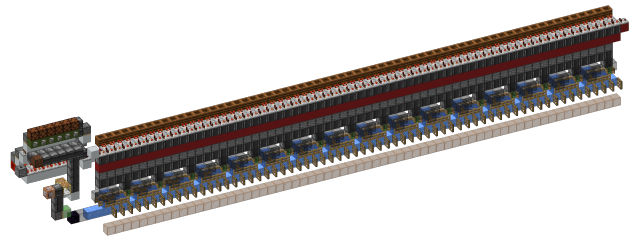


Figure 1: Pipelined Encoded Variable Waterstream

## Applications

- Item transport for halls.

## General Description

Takes a 6 bit binary code and deposits items in the decoded slice in linear time  $O(n)$ . Pipeline-able for massively parallelized chest halls. Uses overstacked comparators with a 10bps waterstream to keep item entity and code in sync. Can execute an operation every 16gt.

## Device Specifications

**Table 1: Device Specifications**

Parameter	Min.	Typ.	Max.	Unit	Conditions
Throughput	16	-	-	gt	Normal Usage
MC Version	1.16	1.17.1	-	MCV	Latest version at time of writing: 1.19.3
Dimensions	6 x 15 x 76			Blocks	

## Testing Data

**Table 2: Executed Tests**

Test	Result
Throughput test	Device was able to function with 16gt clocked input.

## Download Information

**Table 3: Download Information**

Identifier	MC	File	Description
TP02	1.17.1	<a href="#">TP02_Pipelined_Encoded_Variable_Waterstream.litematic</a>	Schematic of device.