Soontech Annals

DC03: 10BPS 2 Digit Decimal Decoder

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Tags: decoders, decimal, linear time

Features

- O(n) linear time decoding, 2 gt/block. Signal travels 10 blocks per second.
- Slim profile. 4 blocks wide.
- Hopperspeed throughput.
- QC based logic with state auto-fix line.

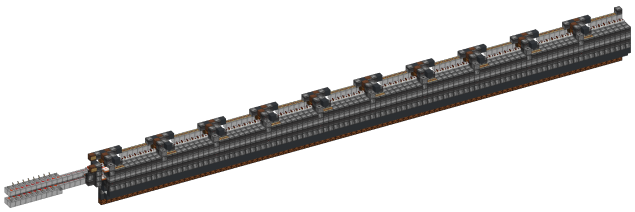

Figure 1: 10 BPS 2 Digit Decimal Decoder

Applications

- Decoding decimal signals for use in encoded chest halls

General Description

The DC03 decoder takes two decimal digits and outputs a pulse at one of 100 slices corresponding to the code. The signal travels 10 blocks per second giving the device an O(n) time complexity.

Device Specifications

Table 1: Inputs

Name	Range	Description
Digit 1	1-10	First digit indicating horizontal section.
Digit 2	1-10	Second digit indicating slice position in section.
Execute	Pulse	Clock signal of device.
Auto-fix	Pulse	Automatically fixes incorrect dropper states.

Table 2: Outputs

Name	Range	Description
Mapped signal	Pulse	Outputs to one of 100 slices corresponding to input code.

Table 3: Device Specifications

Parameter	Min.	Typ.	Max.	Unit	Conditions
Throughput	8	-	-	gt	Normal Usage
Latency	26	-	224	gt	Input to Output.
Active Lag	+0.2	-	+1.6	ms	At Hopperspeed. Ryzen 5 3600, 2GB RAM. MC 1.18.1 with Lithium.
MC Version	1.13	1.18.2	-	MCV	Latest version at time of writing: 1.19.2
Dimensions		104 x 8 x 4		Blocks	

Testing Data

Table 4: Executed Tests

Test	Result
Code test	Device was able to decode all possible codes successfully.
Auto-fix test	Device was able to reset faulty dropper states successfully.
Throughput test	Device was able to decode at 8gt throughput.

Download Information

Table 5: Download Information

Identifier	MC	File	Description
DC03	1.18.2	DC03_10BPS_decimal_decoder_1.18.2.litematic	Litematic of decoder. Includes subregions for testing. Does not include inventories.

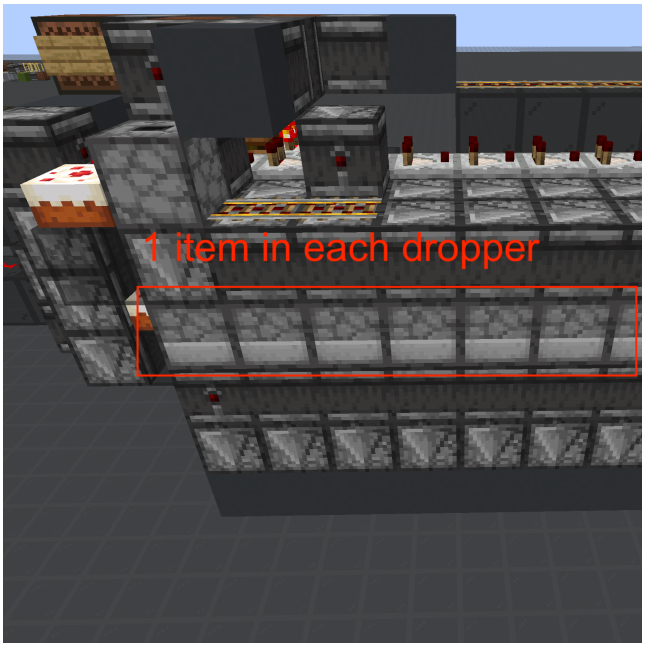

Figure 2: Inventories Setup Guide