Soontech Annals

DC04: Dual Sided 6 Bit Binary Decoder

By: FloppyDonkey
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Features

- Dual sided outputs.
- Signal travels 100 blocks per second.
- No 1gt offset needed. This is achieved through a combination of TTP to get the proper update order, and some rail diodes.
- Minimal flashing rails. QC based logic with BUDed rails.
- Hopperspeed throughput.

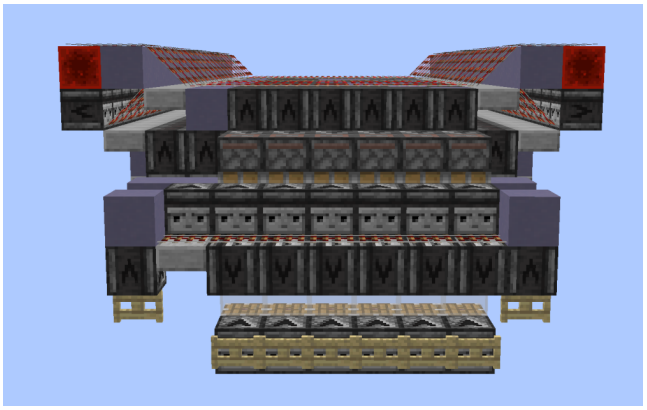

Figure 1: Dual Sided 6 Bit Binary Decoder

Applications

- Decoding decimal signals for use in remote bulk storage systems.
- Decoding decimal signals for use in encoded chest halls.

General Description

The DC04 decoder takes six bits and outputs a pulse at one of 64 slices corresponding to the code. The device is dual sided, meaning it can output a signal to one of two different sides. This effectively adds another bit to the decoder, allowing for 128 different outputs.

Device Specifications

Table 1: Inputs

Name	Range	Description
Bits 1-6	0-1	Binary input
Execute Left	Pulse	Clock signal of device. Outputs to left side of the device.
Execute Right	Pulse	Clock signal of device. Outputs to right side of the device.

Table 2: Outputs

Name	Range	Description
Mapped signal left	Pulse	Outputs to one of 64 slices corresponding to input code on the left side of the decoder.
Mapped signal right	Pulse	Outputs to one of 64 slices corresponding to input code on the right side of the decoder.

Table 3: Device Specifications

Parameter	Min.	Typ.	Max.	Unit	Conditions
Throughput	8	-	-	gt	Normal Usage
Latency	12	-	-	gt	Input to Output.
Active Lag	+3.4	+3.5	+3.6	ms	At Hopperspeed. Ryzen 5 3600, 2GB RAM. MC 1.19.3 with Lithium.
MC Version	1.11	1.19.3	-	MCV	Latest version at time of writing: 1.20.4
Dimensions		68 x 8 x 13		Blocks	

Testing Data

Table 4: Executed Tests

Test	Result
Code test	Device was able to decode all possible codes successfully.
Throughput test	Device was able to decode at 8gt throughput.

Download Information

Table 5: Download Information

Identifier	MC	File	Description
DC04	1.17	DC04_Dual_Sided_6_Bit_Binary_Decoder_1.17.litematic	Litematic of decoder.