

# DC01: 6 Bit Binary Decoder

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Tags: decoders, binary

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## Features

- Constant time decoding. 14gt latency.
- Slim profile. 4 blocks wide.
- 6gt throughput.
- QC based logic.

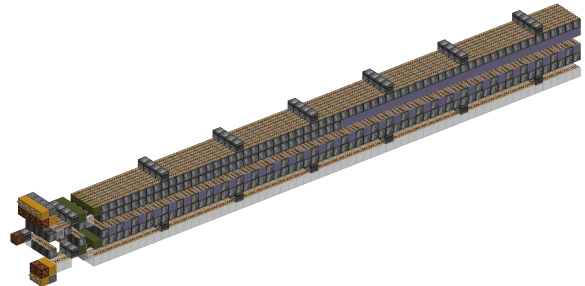


Figure 1: 6 Bit Binary Decoder

## Applications

- Decoding binary signals for use in external bulk systems

## General Description

The DC01 decoder takes six bits and outputs a pulse at one of 64 slices corresponding to the code.

## Device Specifications

**Table 1: Inputs**

Name	Range	Description
Bits 1-6	0-1	Binary input
Execute	Pulse	Clock signal of device.

**Table 2: Outputs**

Name	Range	Description
Mapped signal	Pulse	Outputs to one of 64 slices corresponding to input code.

**Table 3: Device Specifications**

Parameter	Min.	Typ.	Max.	Unit	Conditions
Throughput	6	8	-	gt	Normal Usage
Latency	14	-	-	gt	Input to Output
Active Lag	+4.0	4.5	+5.0	ms	At Hopperspeed. Ryzen 5 3600, 2GB RAM. MC 1.18.1 with Lithium.
MC Version	1.16	1.17.1	-	MCV	Latest version at time of writing: 1.19.2
Dimensions	73 x 10 x 4			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 6gt-8gt throughput.

## Download Information

**Table 5: Download Information**

Identifier	MC	File	Description
DC01	1.17.1	DC01_6bit_decoder.litematic	Litematic of decoder.