nonlinearcircuits

Divide & Conquer

Build and BOM

This is a clock divider module containing 4 different dividers:

1. */2, /4, /8, /16, /32, /64, /128, /256*
2. */1.5, /3*
3. */2.5, /5*
4. */3.5, /7*

All sections will run off a signal patched into section 1.

The module can be patch-programmed to obtain other divisions. For example; patch output /2 into section 4 to get divide by 14 from the /7 output.

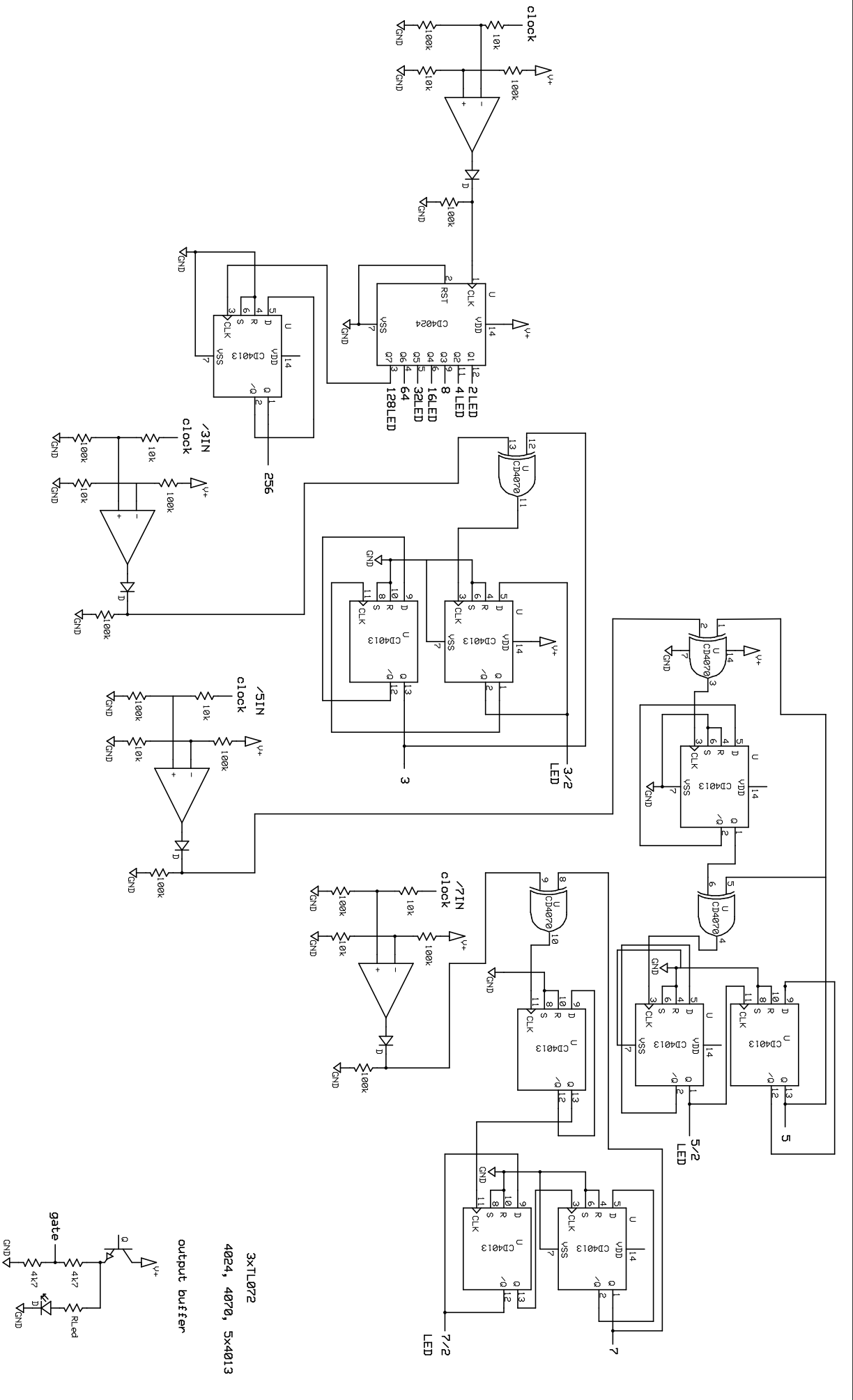The circuit is CMOS based and contains no microprocessors.

In the BOM, part numbers for Tayda or Mouser are given as examples.

BOM

component	quantity	notes
4013	5	CMOS SOIC
4024	1	CMOS SOIC
4070	1	CMOS SOIC
3.5mm jack	18	Kobiconn style, get from Modular Addict or Thonk or Tayda A-865
3mm LED	8	**note – 3mm**
LL4148 diodes	4	Mouser 512-LL4148
TL072	2	SOIC Tayda: A-1136
BC847	14	SOT23 Tayda: A-1339
S1JL or similar	2	Mouser 821-S1JL, dot=cathode
Eurorack power connector	1	Tayda A-198
10uF	2	0805, 25V or higher voltage rating
100nF	7	0805
1k	28	0805
10k	6	0805
100k	10	0805
RL	8	0805 Select to suit LED brightness
10 Pin 2.54mm Single Row Pin Header Strip	4	Tayda: A-197
10 Pin 2.54mm Single Row Female Pin Header	4	Tayda: A-1306

note

Be careful to connect the top and bottom PCBs correctly. Make sure the '256' and '7' printed on the bottom corners of the PCBs and 'in & 'in' on the top 2 corners are lined up

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andrewF

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Page # or name

clock

100k
10k
10k
100k
V+
100k
GND

CD4024
RST
VSS
VDD
CLK
V+
Q1 2LED
Q2 4 LED
Q3 8
Q4 16LED
Q5 32LED
Q6 64
Q7 128LED
256

CD4013
CLK
VSS
VDD
D
S
R
U
Q
/Q
GND

/3IN
clock
100k
10k
10k
100k
V+
100k
GND

CD4070
U

CD4013
CLK
D
S
R
U
Q
/Q
CD4013
CLK
D
S
R
VSS
VDD
U
Q
/Q
V+
GND
3
LED
3/2

CD4070
U
V+
GND

CD4013
CLK
S
D
R
VSS
VDD
U
Q
/Q
GND

CD4070
U

/5IN
clock
100k
10k
10k
100k
V+
100k
GND

CD4013
CLK
D
S
R
VSS
VDD
U
Q
/Q
CD4013
CLK
D
R
U
Q
/Q
5
5/2
LED

/7IN
clock
100k
10k
10k
100k
V+
100k
GND

CD4070
U
GND

CD4013
CLK
S
D
R
U
Q
/Q

CD4013
CLK
S
D
R
U
Q
/Q
GND
CD4013
CLK
S
D
R
VSS
VDD
U
Q
/Q
LED
7/2
7

gate
GND
4k7
4k7
V+
Q
GND
D
RLed

output buffer

3xTL072
4024, 4070, 5x4013