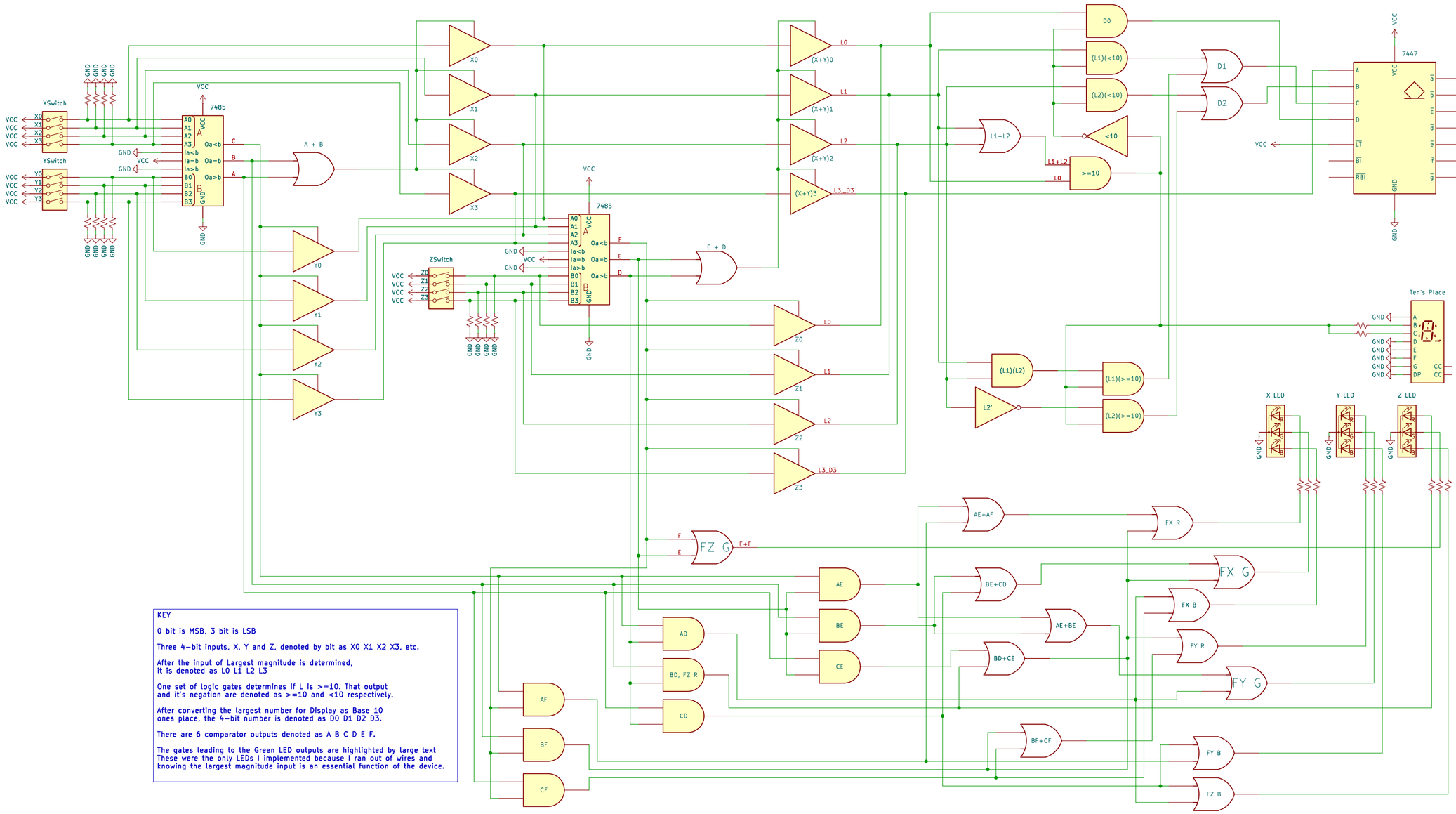
XSwitch
YSwitch
ZSwitch
7485
A + B
E + D
FZ G
L1+L2
>=10
<10
D0
D1
D2
7447
Ten's Place
One's Place
X LED
Y LED
Z LED
(L1)(L2)
L2'
(L1)(>=10)
(L2)(>=10)
AE+AF
BE+CD
AE+BE
BD+CE
BF+CF
FX R
FX G
FX B
FY R
FY G
FY B
FZ B
AE
BE
CE
AD
BD, FZ R
CD
AF
BF
CF
KEY
0 bit is MSB, 3 bit is LSB
Three 4-bit inputs, X, Y and Z, denoted by bit as X0 X1 X2 X3, etc.
After the input of Largest magnitude is determined,
it is denoted as L0 L1 L2 L3
One set of logic gates determines if L is >=10. That output
and it's negation are denoted as >=10 and <10 respectively.
After converting the largest number for Display as Base 10
ones place, the 4-bit number is denoted as D0 D1 D2 D3.
There are 6 comparator outputs denoted as A B C D E F.
The gates leading to the Green LED outputs are highlighted by large text
These were the only LEDs I implemented because I ran out of wires and
knowing the largest magnitude input is an essential function of the device.