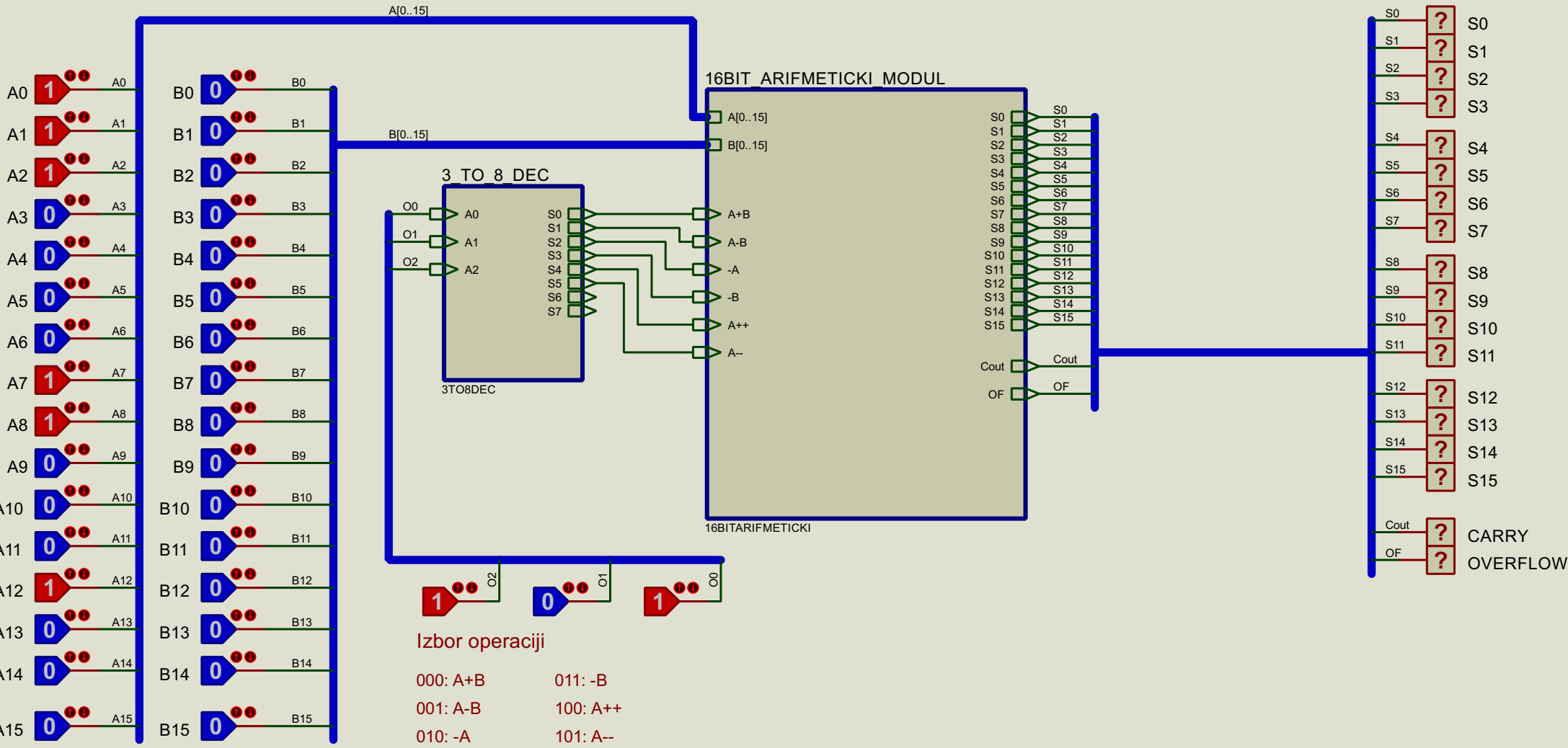


Aritmeticki modul.

A i B su 16 bitni brojeva sa predznakom (Z broj)

A+B, A-B, -A, -B, A+1, A-1

(Bez namenskih kola)

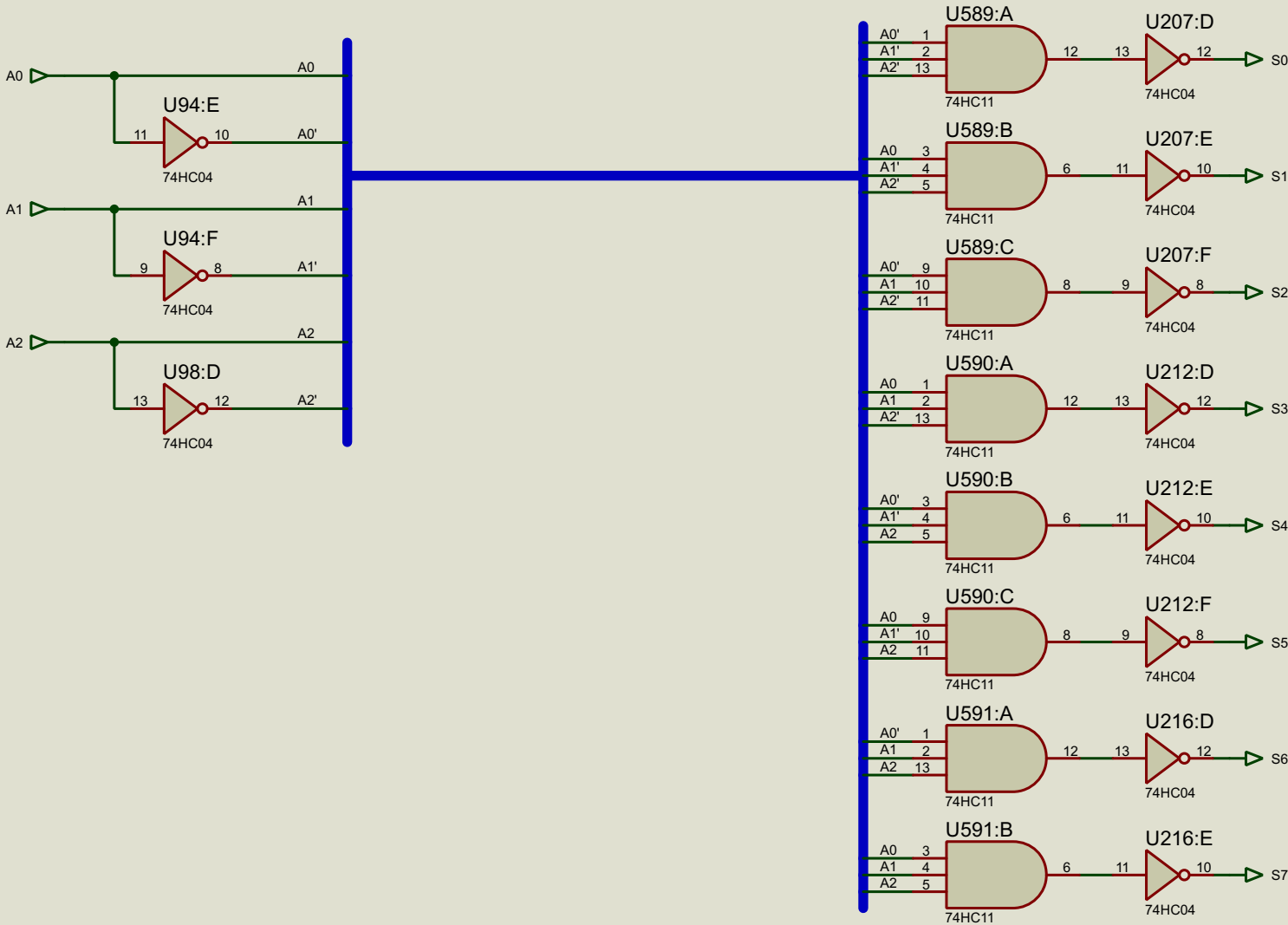


Ako A15/B15 je 0 - pozitivan broj

Ako A15/B15 je 1 - negativan broj

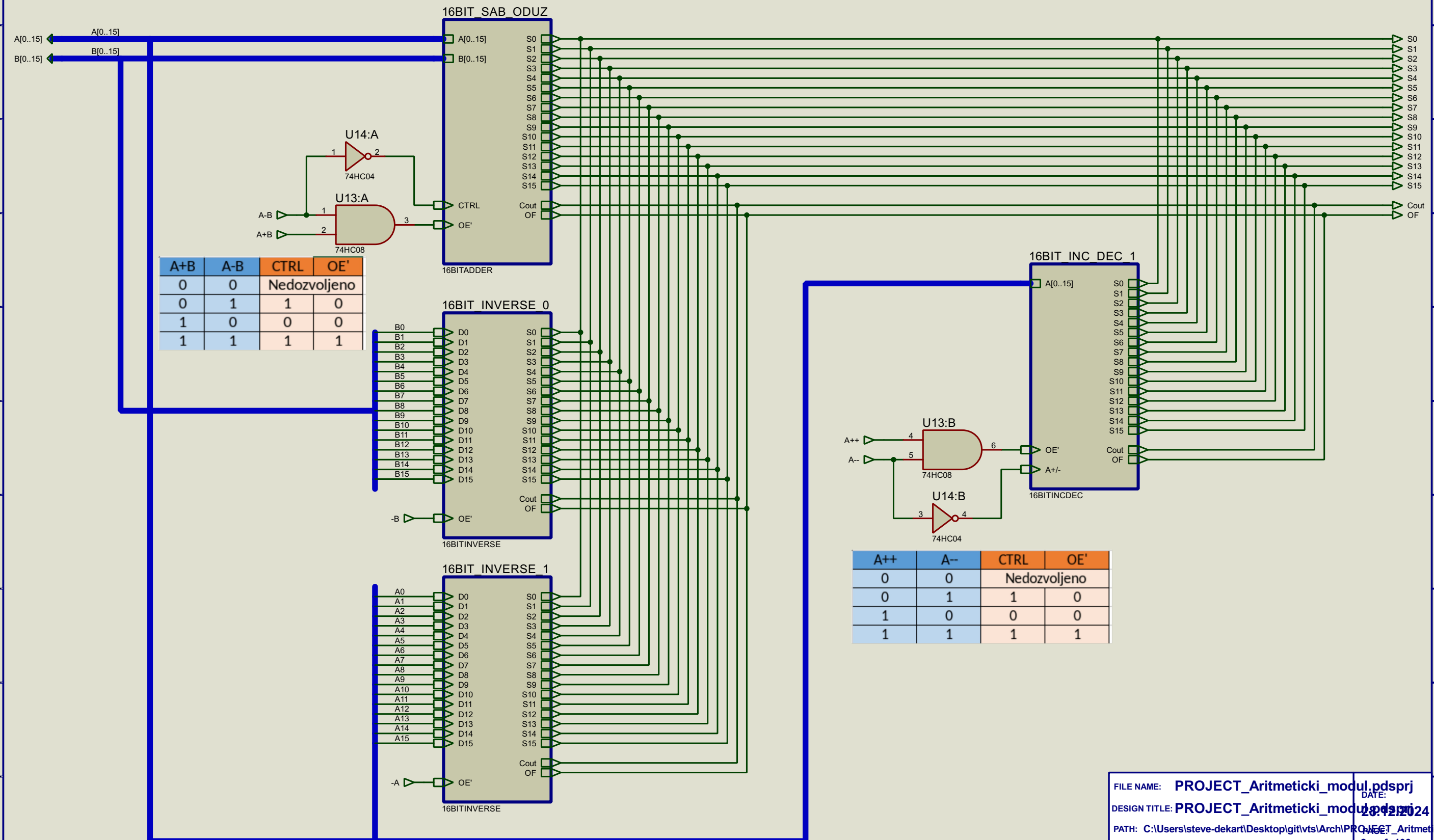
3 to 8 Decoder (Inverse)

Za izbor arifmeticki operaciji

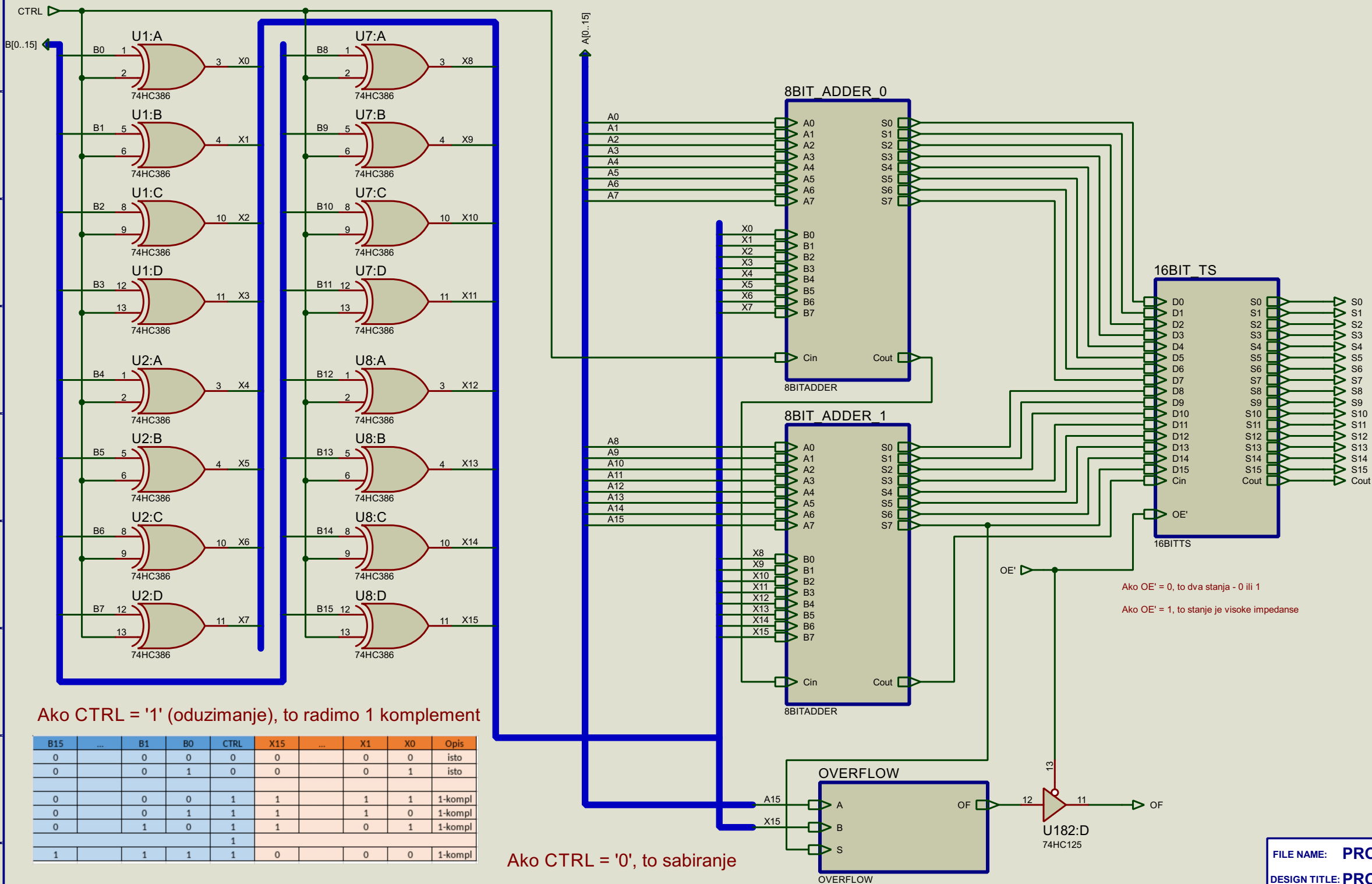


| A2 | A1 | A0 | S7 | S6 | S5 | S4 | S3 | S2 | S1 | S0 | Operacija |
|----|----|----|----|----|----|----|----|----|----|----|-----------|
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | A+B |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | A-B |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | -A |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | -B |
| 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | A++ |
| 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | A-- |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | None |
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | None |

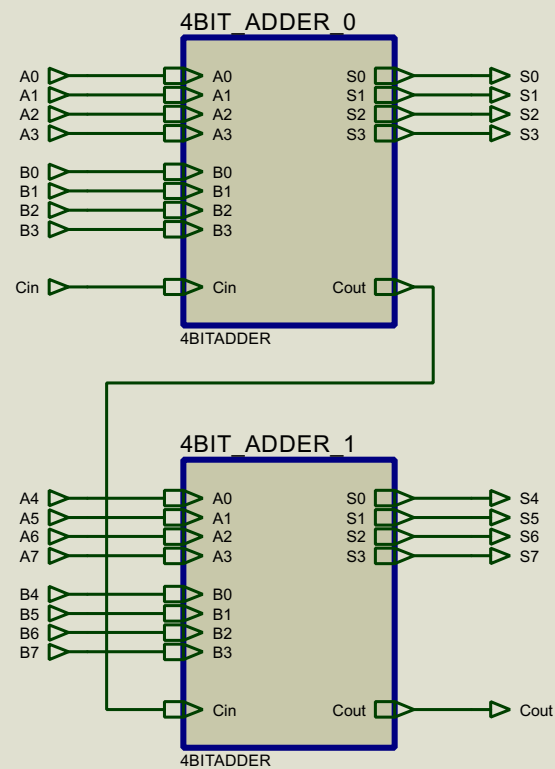
16bit Arifmeticki modul



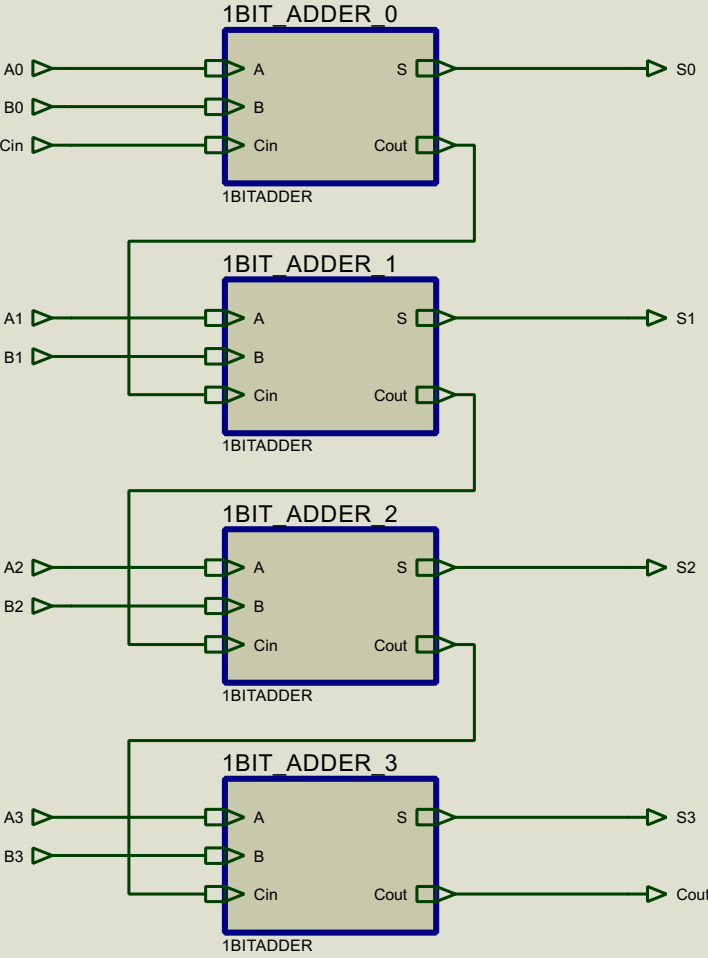
16bit Sabirac i Oduzimac



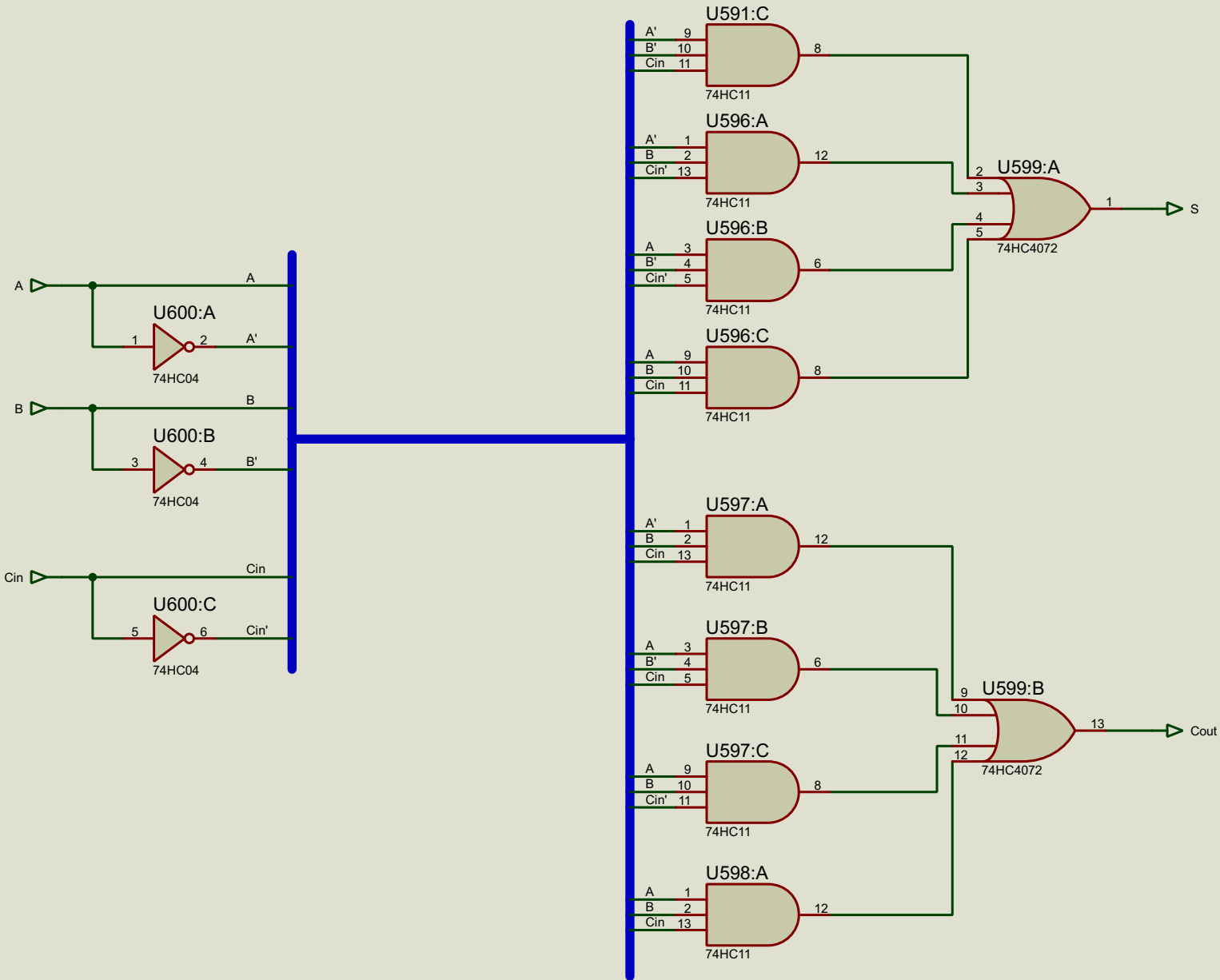
8bit Full Adder



4bit Full Adder

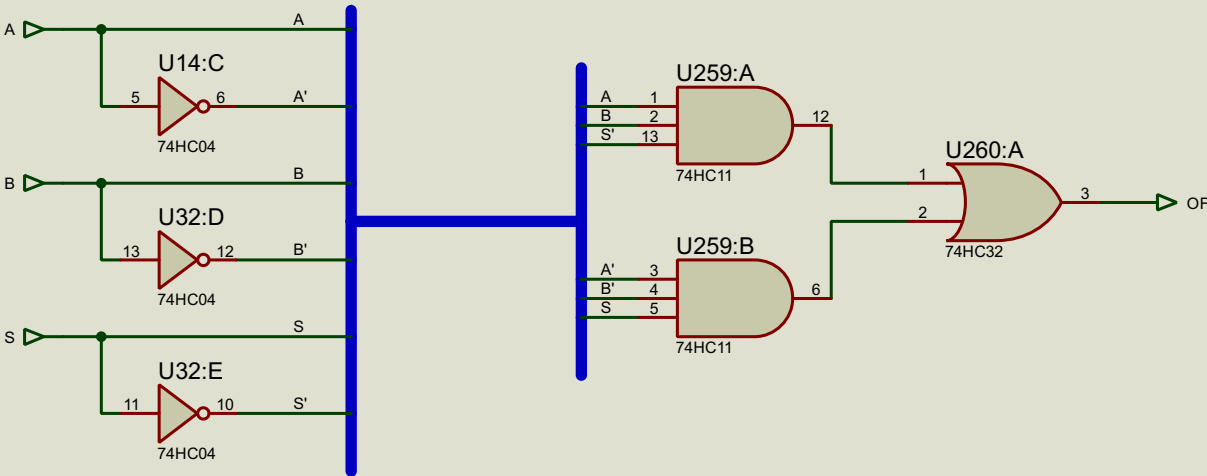


1Bit Full Adder



| A | B | Cin | S | Cout |
|---|---|-----|---|------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Overflow modul



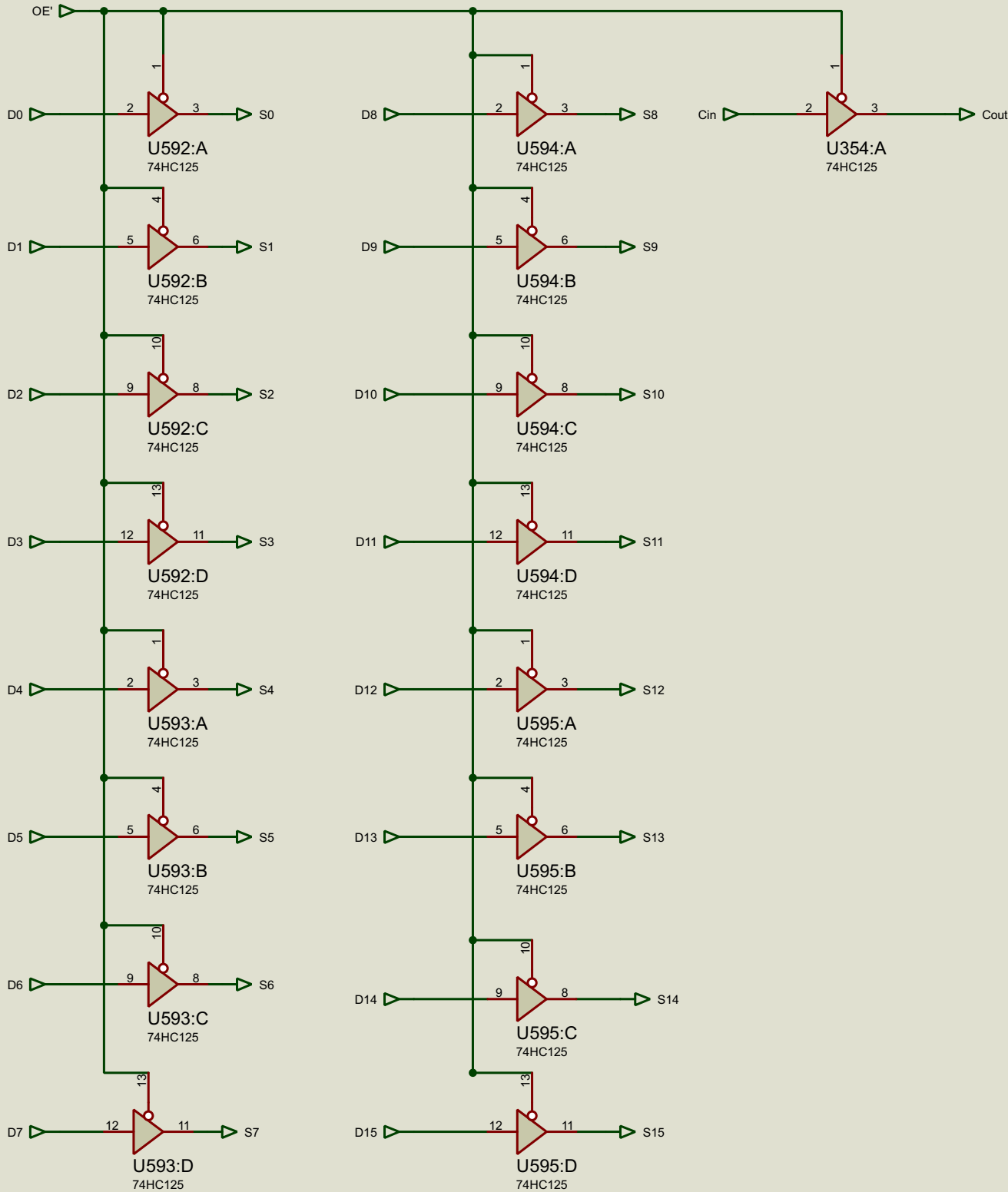
Koristimo poslednji bit
(Za 16bit Z broj, A15, B15 i S15)

| A | B | S | OF |
|---|---|---|----|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

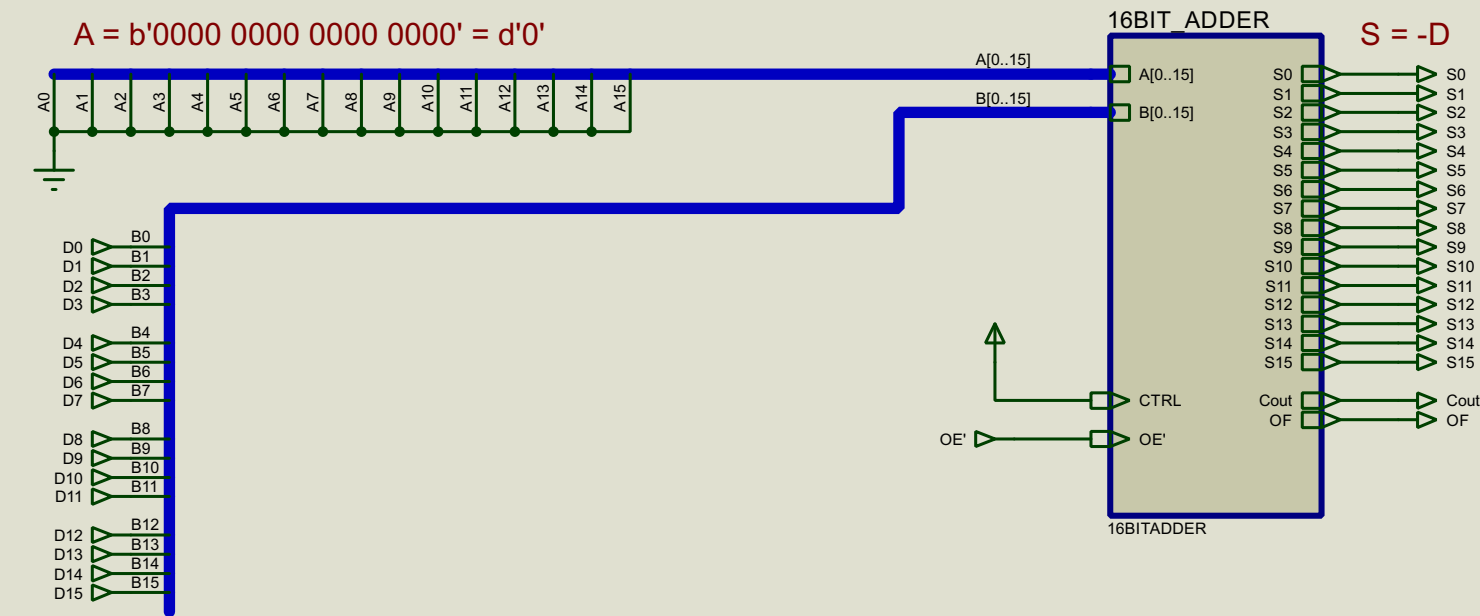
16bit TS output

Ako OE' = 0, to dva stanja - 0 ili 1
Ako OE' = 1, to stanje je visoke impedanse

| D15 | ... | D1 | D0 | OE' | S15 | ... | S1 | S0 |
|-----|-----|----|----|-----|------|-----|------|------|
| x | | x | x | 1 | hi-Z | | hi-Z | hi-Z |
| 0 | | 0 | 0 | 0 | 0 | | 0 | 0 |
| 0 | | 0 | 1 | 0 | 0 | | 0 | 1 |
| ... | | | | | ... | | | |

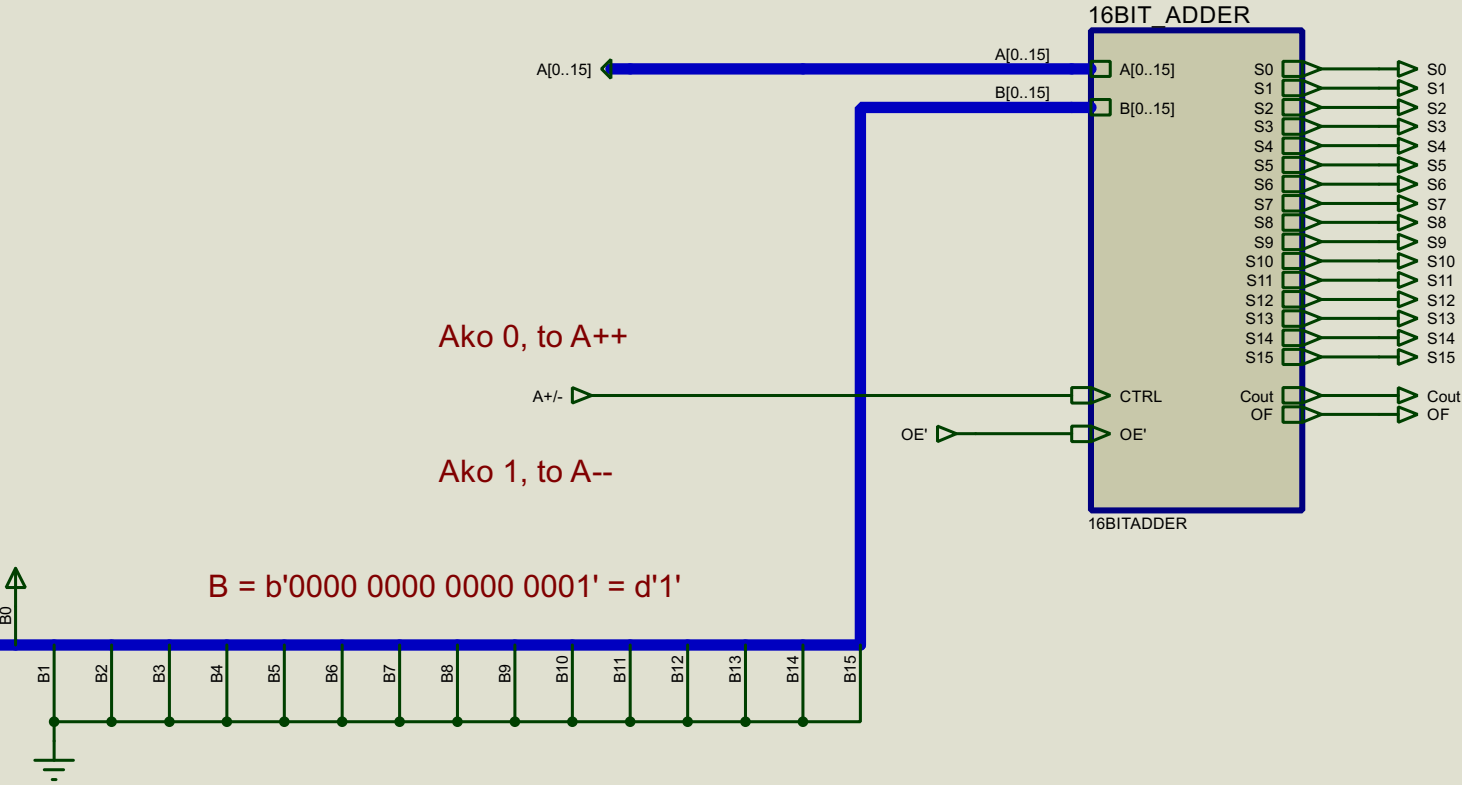


16bit Inverse



| D15 | ... | D1 | D0 | OE' | S15 | ... | S1 | S0 | Cout (Carry) | OF |
|-----|-----|----|----|-----|------|-----|------|------|--------------|------|
| x | | x | x | 1 | hi-Z | | hi-Z | hi-Z | hi-Z | hi-Z |
| 0 | | 0 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 |
| 0 | | 0 | 1 | 0 | 1 | | 1 | 1 | 0 | 0 |
| 0 | | 1 | 0 | 0 | 1 | | 1 | 0 | 0 | 0 |
| 0 | | 1 | 1 | 0 | 1 | | 0 | 1 | 0 | 0 |
| ... | | | | 0 | ... | | | | | |
| 1 | | 1 | 0 | 0 | 0 | | 1 | 0 | 0 | 0 |
| 1 | | 1 | 1 | 0 | 0 | | 0 | 1 | 0 | 0 |

16bit Increment/Decrement A



| A15 | ... | A1 | A0 | A+/- | OE' | S15 | ... | S1 | S0 | Cout (Carry) | OF |
|-----|-----|----|----|------|-----|------|-----|------|------|--------------|------|
| x | | x | x | x | 1 | hi-Z | | hi-Z | hi-Z | hi-Z | hi-Z |
| 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 1 | 0 | 0 |
| 0 | | 0 | 1 | 0 | 0 | 0 | | 1 | 0 | 0 | 0 |
| 0 | | 1 | 0 | 0 | 0 | 0 | | 1 | 1 | 0 | 0 |
| ... | | | | 0 | 0 | | | | | | |
| 1 | | 1 | 0 | 0 | 0 | 1 | | 1 | 1 | 0 | 0 |
| 1 | | 1 | 1 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 |

Za A++ (A+/- je 0)

| A15 | ... | A1 | A0 | A+/- | OE' | S15 | ... | S1 | S0 | Cout (Carry) | OF |
|-----|-----|----|----|------|-----|------|-----|------|------|--------------|------|
| x | | x | x | x | 1 | hi-Z | | hi-Z | hi-Z | hi-Z | hi-Z |
| 0 | | 0 | 0 | 1 | 0 | 1 | | 1 | 1 | 0 | 0 |
| 0 | | 0 | 1 | 1 | 0 | 0 | | 0 | 0 | 1 | 0 |
| 0 | | 1 | 0 | 1 | 0 | 0 | | 0 | 1 | 1 | 0 |
| ... | | | | 1 | 0 | | | | | | |
| 1 | | 1 | 0 | 1 | 0 | 1 | | 0 | 1 | 1 | 0 |
| 1 | | 1 | 1 | 1 | 0 | 1 | | 1 | 0 | 1 | 0 |

Za A-- (A+/- je 1)