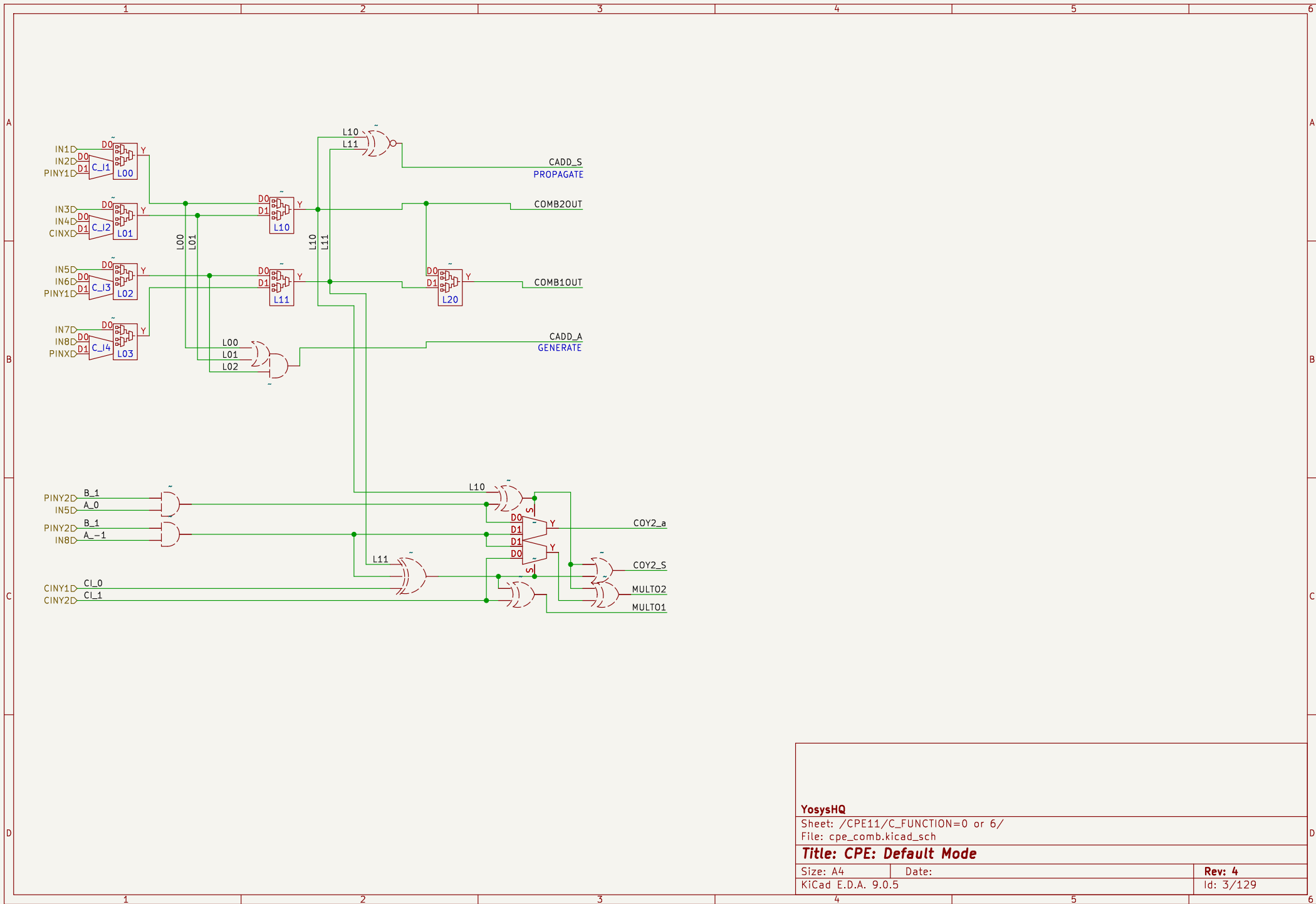
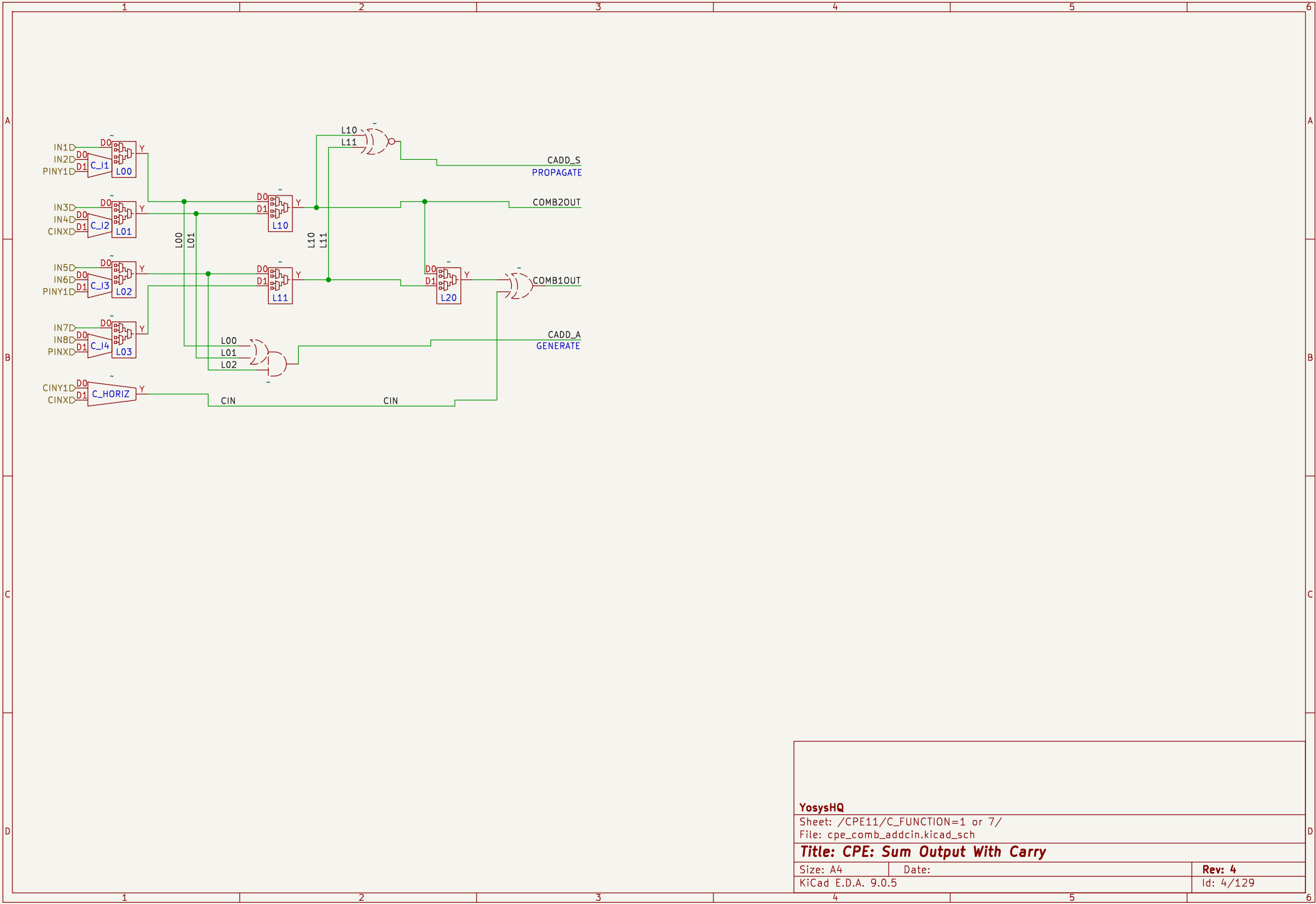
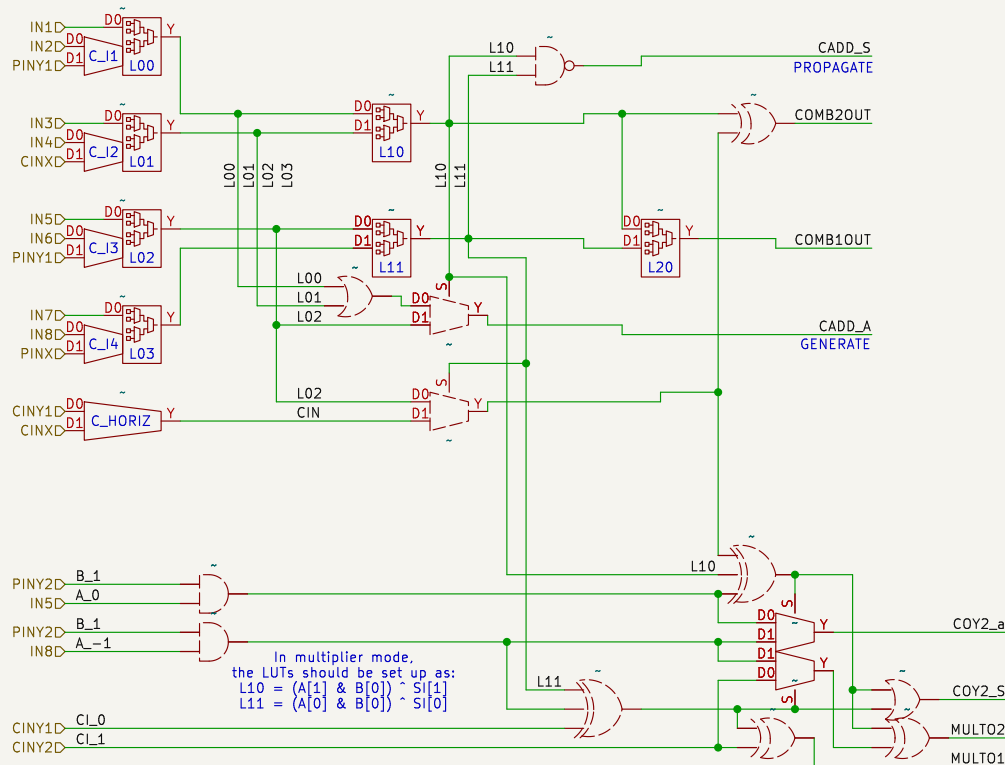


Only Plane 1 is depicted  
for conciseness; in the  
switchbox sheets you can  
see the connections to  
other planes.









C\_FUNCTION = 2: ADDF2

This provides a 2-bit full adder.

The addition is performed in propagate/generate style.

Setting C\_HORIZ configures the adder to propagate carries horizontally, rather than vertically. This feature isn't implemented in p\_r or nextpnr because horizontal carries have twice the propagation delay of vertical carries.

C\_FUNCTION = 3: MULT

This provides a 2x2-bit Booth multiplier.

The dedicated logic performs multiplication by B[1], while multiplication by B[0] is performed within the soft logic.

(These functions differ by how they set up the downstream carry and propagation lines; from this part of the logic they function identically, thus have been grouped together)

YosysHQ

Sheet: /CPE11/C\_FUNCTION=2 or 3/

File: cpe\_comb\_addf2.kicad\_sch

**Title: CPE: 2-bit Adder/Multiplier Mode**

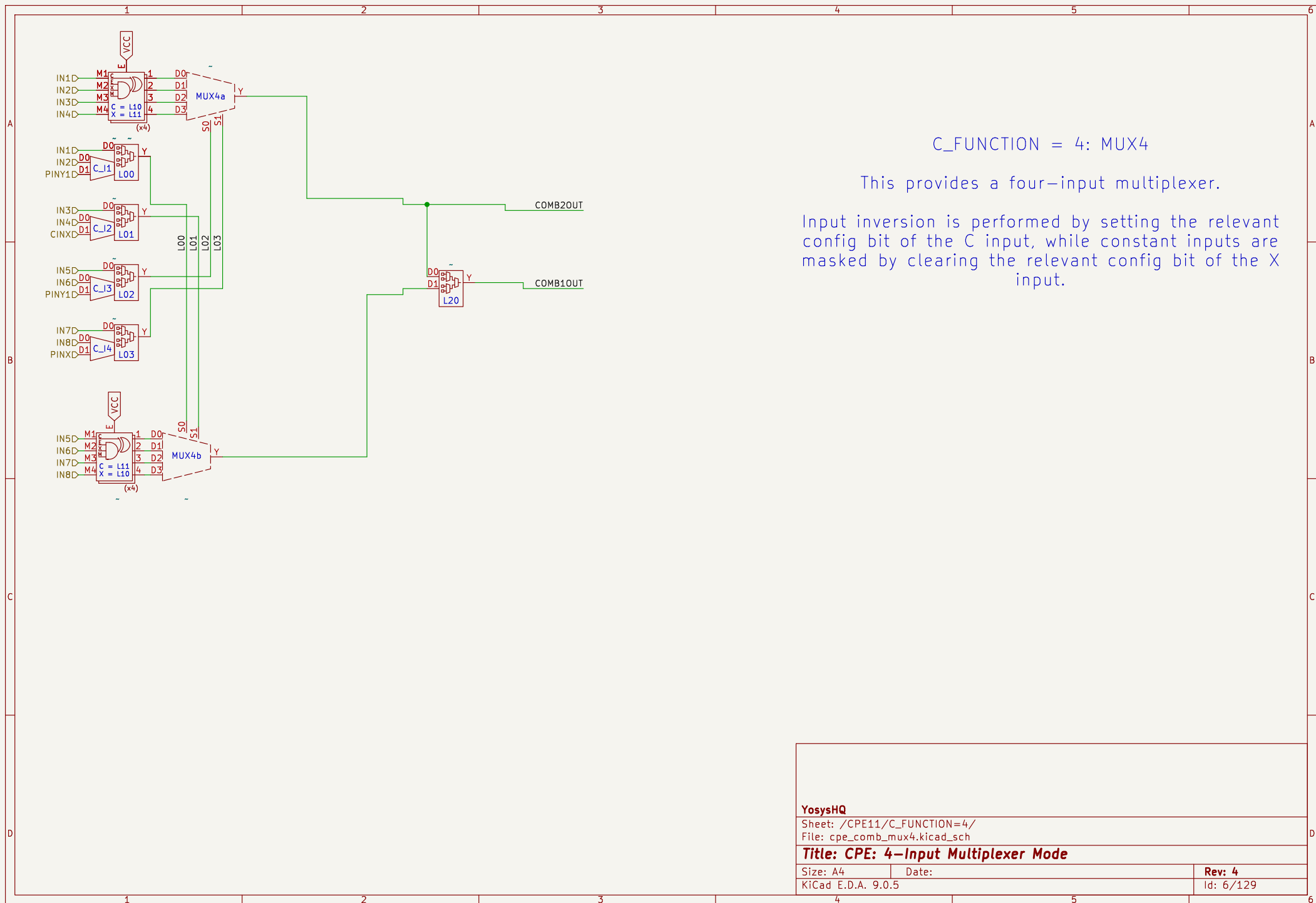
Size: A4

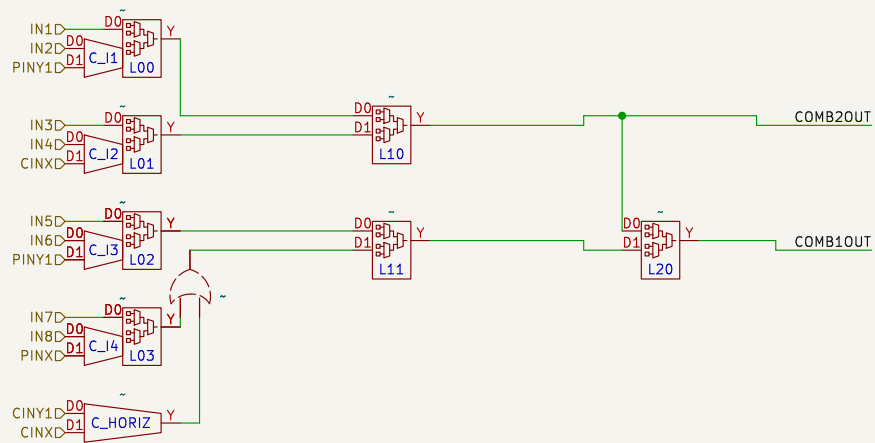
Date:

Rev: 4

KiCad E.D.A. 9.0.5

Id: 5/129





C\_FUNCTION = 5: EN\_CIN

This is one of the more obscure CPE configurations.

The intended usecase of this is to source a signal from the carry lines to reduce routing delay.

YosysHQ

Sheet: /CPE11/C\_FUNCTION=5/  
File: cpe\_comb\_en\_cin.kicad\_sch

**Title: CPE: Sum Input With Carry**

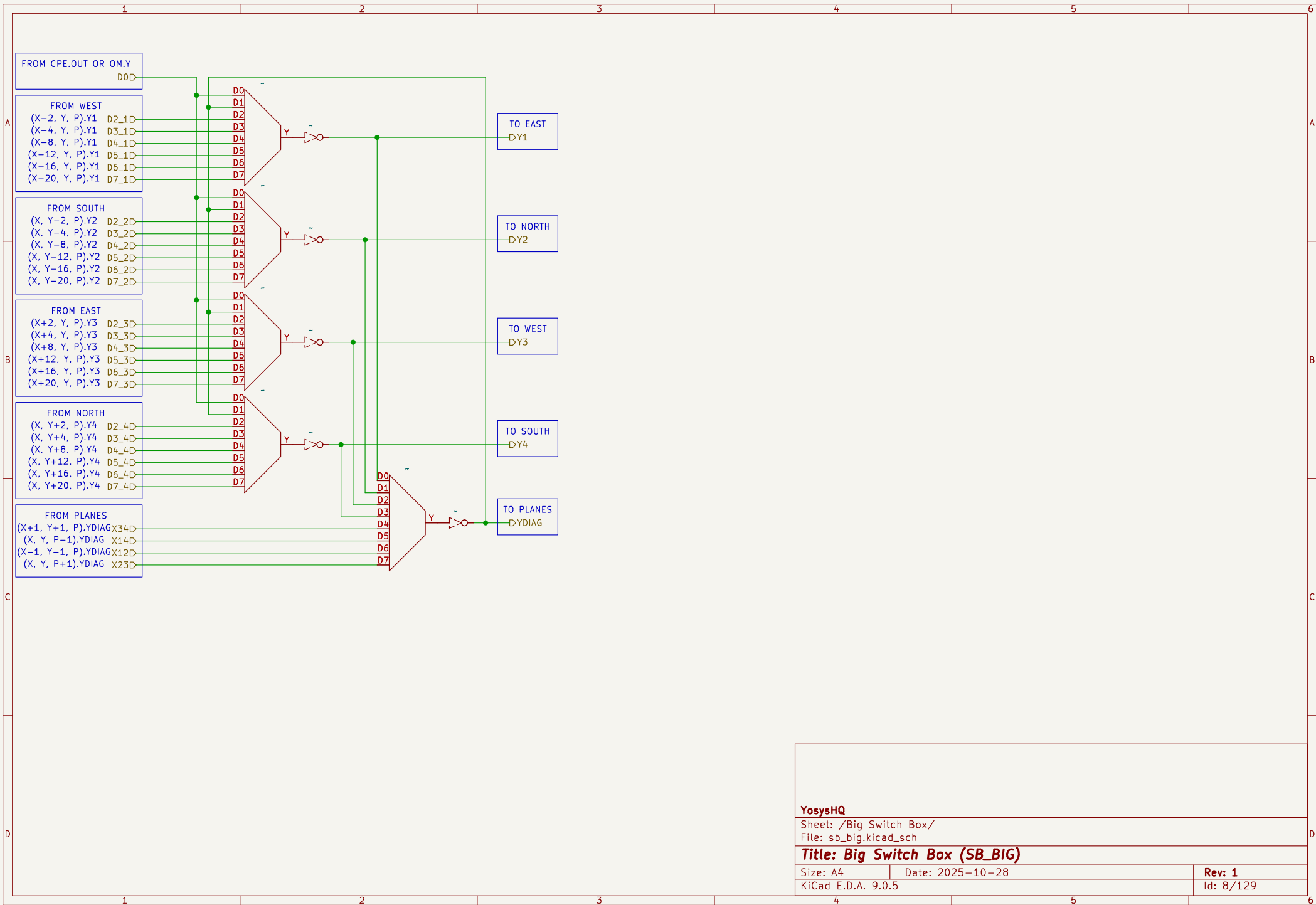
Size: A4

Date:

Rev: 4

KiCad E.D.A. 9.0.5

Id: 7/129



YosysHQ

Sheet: /Big Switch Box/  
File: sb\_big.kicad\_sch

**Title: Big Switch Box (SB\_BIG)**

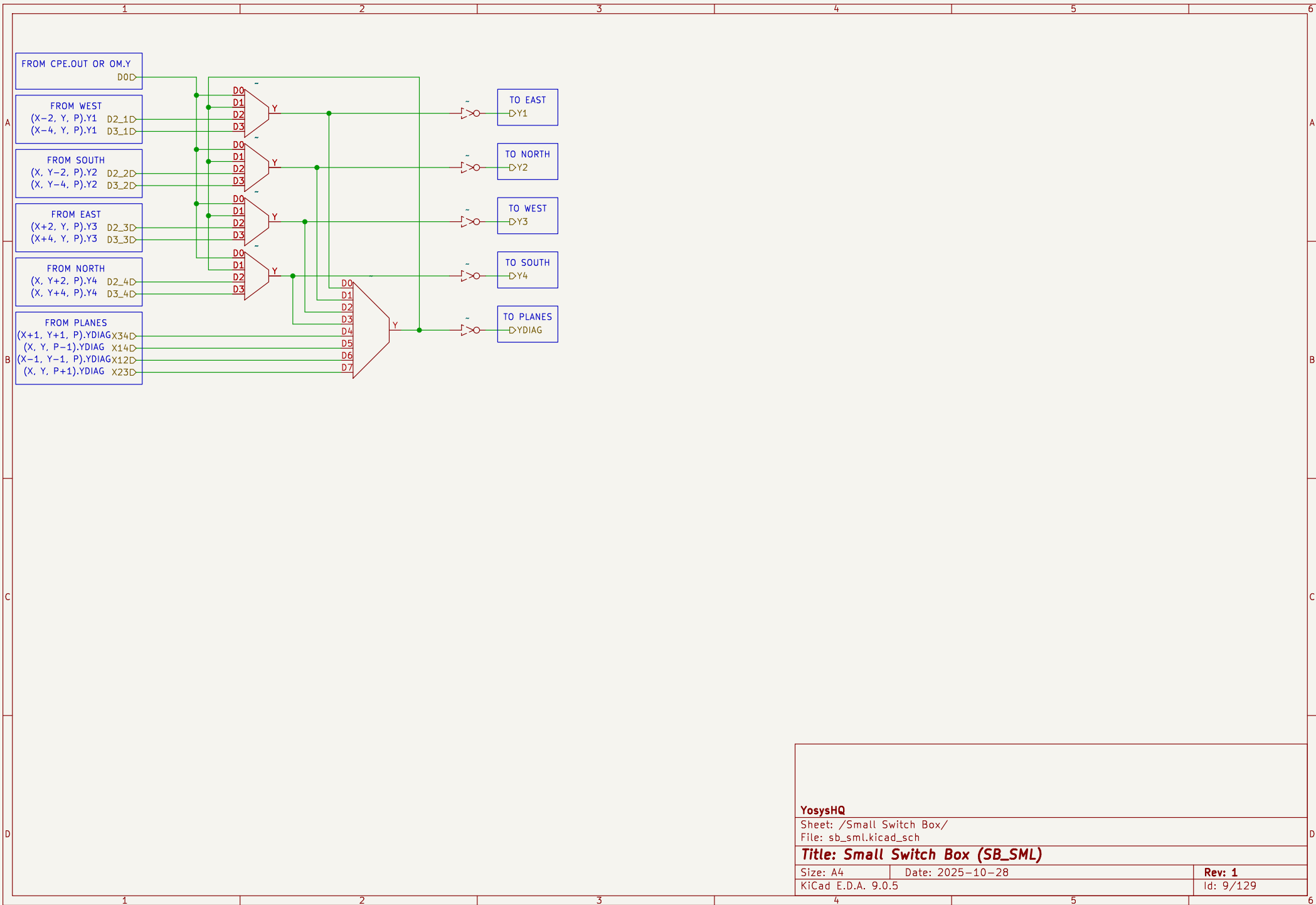
Size: A4

Date: 2025-10-28

Rev: 1

KiCad E.D.A. 9.0.5

Id: 8/129





YosysHQ

Sheet: /Input Multiplexer/  
File: im.kicad\_sch

**Title: Input Multiplexer (IM)**

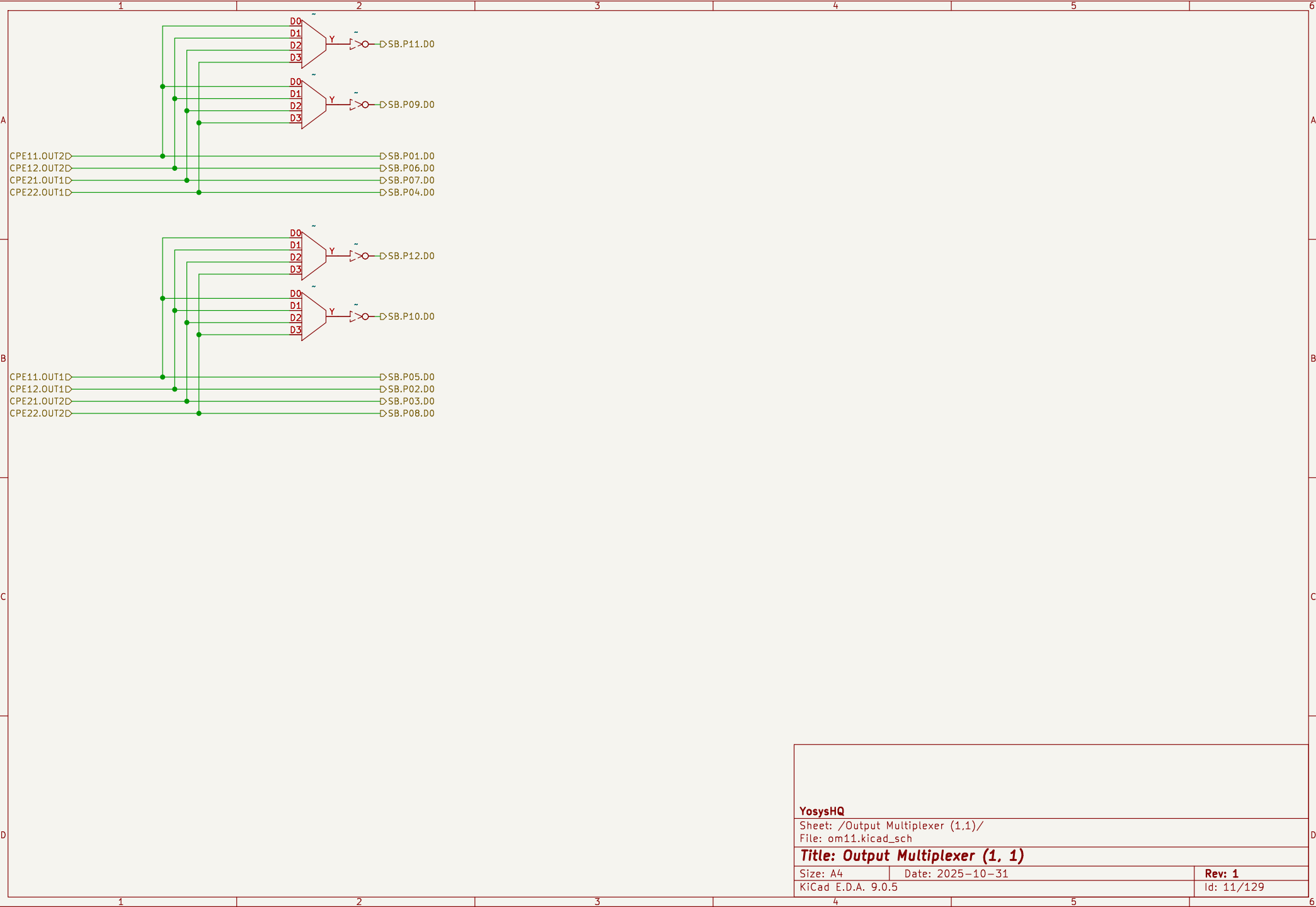
Size: A3

Date:

Rev: 1

KiCad E.D.A. 9.0.5

Id: 10/129



YosysHQ

Sheet: /Output Multiplexer (1,1)/  
File: om11.kicad\_sch

**Title: Output Multiplexer (1, 1)**

Size: A4

Date: 2025-10-31

Rev: 1

KiCad E.D.A. 9.0.5

Id: 11/129

