How to implement differential ports in Libero

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Blog post: https://soceame.wordpress.com/2025/03/11/how-to-implement-differential-ports-in-libero/

Blog: https://soceame.wordpress.com/

GitHub: https://github.com/DRubioG

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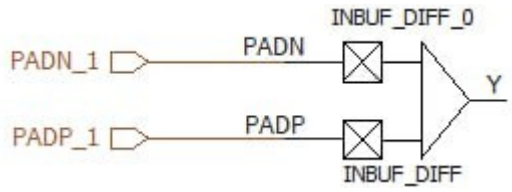
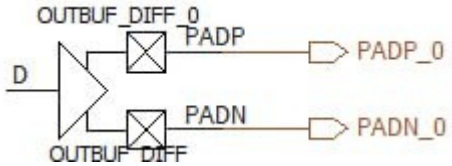
To implement differential ports in Libero, you have to use the components provided by Libero to implement them.

To do this, Libero provides the following components:

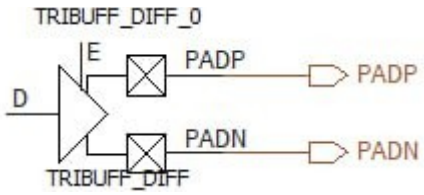
- **INBUF_DIFF**: this buffer transforms the differential input signal into a simple signal.



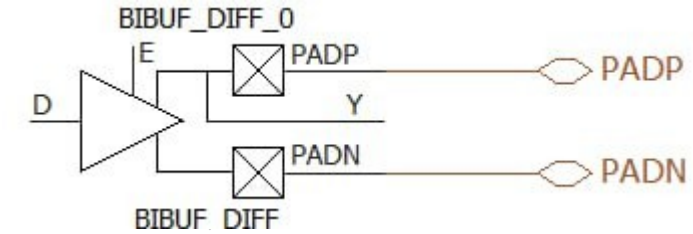
- **OUTBUF_DIFF**: this buffer transforms the simple output signal into a differential signal.



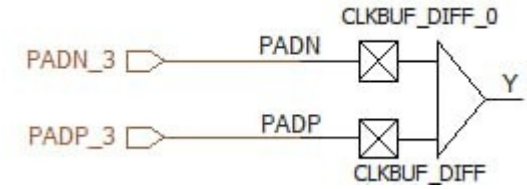
- **TRIBUF_DIFF**: this buffer enables the differential output.



- **BIBUF_DIFF**: this buffer allows you to work with bidirectional differential input/output signals.



Finally, it should be noted that there is also a buffer for differential clocks called **CLKBUF_DIFF**, this buffer allows you to transform the differential input clock signal into a simple clock signal.



NOTE: the differential pins have to be the same differential pairs used in the chip. It only allows us to assign positive pins, the negative ones are auto-assigned.

7	PADP	INPUT	LVDS33	A19	☑	CLKBUF_DIFF	Bank1	None
8	PADN	INPUT	LVDS33	A18	☑	CLKBUF_DIFF	Bank1	None

If you check the pins, when marking pin A19 as positive, it auto-assigns the negative to A18.