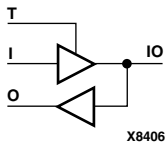
IOBUF

Primitive: Bi-Directional Buffer with Selectable I/O Interface



For Virtex-4 devices, IOBUF is a bi-directional buffer whose I/O interface corresponds to a specific I/O standard. You can attach an IOSTANDARD attribute to an IOBUF instance.

IOBUF components that use the LVTTL, LVCMOS15, LVCMOS18, LVCMOS25, and LVCMOS33 signaling standards have selectable capacitance drive and slew rates using the capacitance DRIVE and SLEW constraints. The defaults are CAPACITANCE = DONT_CARE, DRIVE = 12 mA, and SLOW slew.

IOBUFs are composites of IBUF and OBUFT elements. The O output is X (unknown) when IO (input/output) is Z. IOBUFs can be implemented as interconnections of their component elements.

Inputs		Bidirectional	Outputs
T	I	IO	O
1	X	Z	X
0	1	1	1
0	0	0	0

Usage

These design elements are instantiated and inferred.

Available Attributes

Attribute	Type	Allowed Values	Default	Description
CAPACITANCE	STRING	"LOW", "NORMAL", "DON'T CARE"	"DON'T CARE"	Specifies whether it is desired to use an I/O with lower or normal intrinsic capacitance.
DRIVE	INTEGER	2, 4, 6, 8, 12, 16, 24	12	Selects output drive strength (mA) for the SelectIO buffers that use the LVTTL, LVCMOS12, LVCMOS15, LVCMOS18, LVCMOS25, or LVCMOS33 interface I/O standard.
IOSTANDARD	STRING	"DEFAULT"	"DEFAULT"	Use to assign an I/O standard to an I/O primitive.
SLEW	INTEGER	"SLOW" or "FAST"	"SLOW"	Sets the output rise and fall time.

For More Information

Consult the *Virtex-4 User Guide*.