Introduction

FPGA IO Standards Reference covers all the IO standards supported in Altium Designer. The device support tables given with individual IO standard provide information about the value for the standard when used as a constraints attribute.

### IO Standards

The available IO Standards are listed as follows:

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DHSTL18II

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Differential High-Speed Transceiver Logic Class II with Digitally Controlled Impedance technology

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Differential Stub Series Terminated Logic (1.8 Volts) Class II with Digitally Controlled Impedance technology

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**GTL**

**Gunning Transceiver Logic**

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HSTLI_18_DCI

High-Speed Transceiver Logic (1.8 Volts) Class I with Digitally Controlled Impedance technology

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High-Speed Transceiver Logic (1.8 Volts) Class IV with Digitally Controlled Impedance technology

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*High-Speed Transceiver Logic Class IV with Digitally Controlled Impedance technology*

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**LVCMOS5**

Low-Voltage Complementary Metal-Oxide Semiconductor (5 Volts)

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LVCMOS12
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# LVCMOS15

Low-Voltage Complementary Metal-Oxide Semiconductor (1.5 Volts)

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Low-Voltage Complementary Metal-Oxide Semiconductor (1.5 Volts) with Digitally Controlled Impedance technology

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LVCMOS15_DCI_DV2

Low-Voltage Complementary Metal-Oxide Semiconductor (1.5 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance

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# LVCMOS18

Low-Voltage Complementary Metal-Oxide Semiconductor (1.8 Volts)

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**LVCMOS18_DCI**

Low-Voltage Complementary Metal-Oxide Semiconductor (1.8 Volts) with Digitally Controlled Impedance technology

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Low-Voltage Complementary Metal-Oxide Semiconductor (1.8 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance

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### LVCMOS25

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LVCMOS25_DCI

Low-Voltage Complementary Metal-Oxide Semiconductor (2.5 Volts) with Digitally Controlled Impedance technology

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LVCMOS25_DCI_DV2

Low-Voltage Complementary Metal-Oxide Semiconductor (2.5 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance

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### LVCMOS33

Low-Voltage Complementary Metal-Oxide Semiconductor (3.3 Volts)

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Low-Voltage Complementary Metal-Oxide Semiconductor (3.3 Volts) with Digitally Controlled Impedance technology

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**LVCMOS33\_DCI\_DV2**

Low-Voltage Complementary Metal-Oxide Semiconductor (3.3 Volts) with Digitally Controlled Impedance technology supporting controlled impedance drivers with half-impedance

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### Low Voltage Differential Signaling (3.3 Volts)

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**LVDS33_DCI**

Low Voltage Differential Signaling (3.3 Volts) with Digitally Controlled Impedance technology

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## LVDS_DT

**Low Voltage Differential Signaling with Differential Termination**

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## LVDSEXT25

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**LVDSEXT25_DT**

Extended Low Voltage Differential Signaling (2.5 Volts) with Differential Termination

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**LVDSEXT33**

Extended Low Voltage Differential Signaling (3.3 Volts)

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## LVDSEXT33_DCI

Extended Low Voltage Differential Signaling (3.3 Volts) with Digitally Controlled Impedance technology

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# LVPECL

Low-Voltage Positive Emitter-Coupled Logic

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## LVPECL25

Low-Voltage Positive Emitter-Coupled Logic (2.5 Volts)

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Low-Voltage Transistor-Transistor Logic (1.5 Volts)

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**Low-Voltage Transistor-Transistor Logic (2.5 Volts)**

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Low-Voltage Transistor-Transistor Logic (3.3 Volts)

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### MINILVDS25

**Mini Low Voltage Differential Signaling with Differential Termination (2.5 Volts)**

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## PCML

**Pseudo Current Mode Logic**

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### PCML15

**Pseudo Current Mode Logic (1.5 Volts)**

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## RSDS25

**Reduced Swing Differential Signaling (2.5 Volts)**

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Ultra Low Voltage Differential Signaling with Differential Termination (2.5 Volts)

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**ULVDS25_DT**

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