

## Information for Basys FPGA configuration

The Basys 3 development board description is presented in *Basys3board.rar* archive. It contains the board description, schematic and master XDC file.

### FPGA name

The FPGA parameters, which are used in this course, are shown in Table 1. Use them when creating Vivado project for Basys 3 board.

*Table 1. FPGA parameters*

	Artix 7
Family	Artix 7
Device	XC7A35T
Package	CPG236

### Pin connections in XDC-file

XDC clock description for Basys 3 Artix FPGA board

```
set_property PACKAGE_PIN W5 [get_ports clk]

    set_property IOSTANDARD LVCMOS33 [get_ports clk]
    create_clock -add -name sys_clk_pin -period 10.00 -waveform {0 5}
[get_ports clk]
```

The FPGA pins for sliders, LEDs, seven-segment indicators and buttons on the Basys 3 board.

```
## Switches
#set_property PACKAGE_PIN V17 [get_ports {sw[0]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[0]}]
#set_property PACKAGE_PIN V16 [get_ports {sw[1]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[1]}]
#set_property PACKAGE_PIN W16 [get_ports {sw[2]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[2]}]
#set_property PACKAGE_PIN W17 [get_ports {sw[3]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[3]}]
#set_property PACKAGE_PIN W15 [get_ports {sw[4]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[4]}]
#set_property PACKAGE_PIN V15 [get_ports {sw[5]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[5]}]
#set_property PACKAGE_PIN W14 [get_ports {sw[6]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[6]}]
#set_property PACKAGE_PIN W13 [get_ports {sw[7]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[7]}]
#set_property PACKAGE_PIN V2 [get_ports {sw[8]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[8]}]
#set_property PACKAGE_PIN T3 [get_ports {sw[9]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[9]}]
#set_property PACKAGE_PIN T2 [get_ports {sw[10]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[10]}]
#set_property PACKAGE_PIN R3 [get_ports {sw[11]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[11]}]
#set_property PACKAGE_PIN W2 [get_ports {sw[12]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[12]}]
#set_property PACKAGE_PIN U1 [get_ports {sw[13]}]
#set_property IOSTANDARD LVCMOS33 [get_ports {sw[13]}]
#set_property PACKAGE_PIN T1 [get_ports {sw[14]}]
```

```

    #set_property IOSTANDARD LVCMOS33 [get_ports {sw[14]]}
#set_property PACKAGE_PIN R2 [get_ports {sw[15]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {sw[15]]}

## LEDs
#set_property PACKAGE_PIN U16 [get_ports {led[0]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[0]]}
#set_property PACKAGE_PIN E19 [get_ports {led[1]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[1]]}
#set_property PACKAGE_PIN U19 [get_ports {led[2]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[2]]}
#set_property PACKAGE_PIN V19 [get_ports {led[3]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[3]]}
#set_property PACKAGE_PIN W18 [get_ports {led[4]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[4]]}
#set_property PACKAGE_PIN U15 [get_ports {led[5]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[5]]}
#set_property PACKAGE_PIN U14 [get_ports {led[6]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[6]]}
#set_property PACKAGE_PIN V14 [get_ports {led[7]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[7]]}
#set_property PACKAGE_PIN V13 [get_ports {led[8]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[8]]}
#set_property PACKAGE_PIN V3 [get_ports {led[9]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[9]]}
#set_property PACKAGE_PIN W3 [get_ports {led[10]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[10]]}
#set_property PACKAGE_PIN U3 [get_ports {led[11]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[11]]}
#set_property PACKAGE_PIN P3 [get_ports {led[12]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[12]]}
#set_property PACKAGE_PIN N3 [get_ports {led[13]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[13]]}
#set_property PACKAGE_PIN P1 [get_ports {led[14]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[14]]}
#set_property PACKAGE_PIN L1 [get_ports {led[15]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {led[15]]}

##7 segment display
#set_property PACKAGE_PIN W7 [get_ports {seg[0]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {seg[0]]}
#set_property PACKAGE_PIN W6 [get_ports {seg[1]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {seg[1]]}
#set_property PACKAGE_PIN U8 [get_ports {seg[2]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {seg[2]]}
#set_property PACKAGE_PIN V8 [get_ports {seg[3]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {seg[3]]}
#set_property PACKAGE_PIN U5 [get_ports {seg[4]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {seg[4]]}
#set_property PACKAGE_PIN V5 [get_ports {seg[5]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {seg[5]]}
#set_property PACKAGE_PIN U7 [get_ports {seg[6]]}
    #set_property IOSTANDARD LVCMOS33 [get_ports {seg[6]]}

#set_property PACKAGE_PIN V7 [get_ports dp]

    #set_property IOSTANDARD LVCMOS33 [get_ports dp]

```

```
#set_property PACKAGE_PIN U2 [get_ports {an[0]}]
    #set_property IOSTANDARD LVCMOS33 [get_ports {an[0]}]
#set_property PACKAGE_PIN U4 [get_ports {an[1]}]
    #set_property IOSTANDARD LVCMOS33 [get_ports {an[1]}]
#set_property PACKAGE_PIN V4 [get_ports {an[2]}]
    #set_property IOSTANDARD LVCMOS33 [get_ports {an[2]}]
#set_property PACKAGE_PIN W4 [get_ports {an[3]}]
    #set_property IOSTANDARD LVCMOS33 [get_ports {an[3]}]
```

```
##Buttons
```

```
#set_property PACKAGE_PIN U18 [get_ports btnC]
    #set_property IOSTANDARD LVCMOS33 [get_ports btnC]
#set_property PACKAGE_PIN T18 [get_ports btnU]
    #set_property IOSTANDARD LVCMOS33 [get_ports btnU]
#set_property PACKAGE_PIN W19 [get_ports btnL]
    #set_property IOSTANDARD LVCMOS33 [get_ports btnL]
#set_property PACKAGE_PIN T17 [get_ports btnR]
    #set_property IOSTANDARD LVCMOS33 [get_ports btnR]
#set_property PACKAGE_PIN U17 [get_ports btnD]
    #set_property IOSTANDARD LVCMOS33 [get_ports btnD]
```