Program FPGA

This guide demonstrates how to program the "Zynqberry" TE0726_M. Before you start with this guide you should have created a project and written an application. Since the Zynqberry board only have a clock that is dedicated to the processor we need to start the processor in order to generate a clock signal for the logic circuit. Your will therefore need to have Xilinx SDK installed on your computer in order to have a clock controlled process running in your logic.

1) In the "Flow Navigator panel" under "Program and Debug" click "Generate Bitstream"

and "Yes" in the window that pops up. Vivado will then generate the bit file if you don't

have any errors in you project.



2) Click "Cancel" to the window that pops up when your file has been generated



3) Click "File->Export->Export Hardware..." and mark the check mark "Include bitstream"

and click "OK" on the window that pops up

😣 💿 Export Hardware
Export hardware platform for software development tools.
Include bitstream
Export to: 🛜 <local project="" to=""> 🔹</local>
OK Cancel

4) Close Vivado and open the program "xsdk", click "Browse" and find your "Vivado"

project and select the folder that ends with .sdk and click "OK"

8 Workspace Launcher	
Select a workspace	
Xilinx SDK stores your projects in a folder called a workspace. Choose a workspace folder to use for this session.	
Workspace: naskr/Documents/Xilinx_workspace/Guide_test_proj/Guide_test_proj.sdk +	Browse
Use this as the default and do not ask again	
Cancel	OK

5) In "SDK" click "File->New->Application Project". Write a project name and under

"Hardware Platform" click on "new..."

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6) Give your new hardware platform a name and find the ".hdf" file in the .sdk directory for

the "Target Hardware Specifications" followed by "Finish"

	lardware Project	
w Hardwa	are Project	
reate a new	v Hardware Project.	
Project nam	e: Zynqberry_HW_platform	
🗹 Use de	fault location	
ocation:	/home/masks/Documents/Xilina_workspace/Guide_test_proj/Guide_test_proj.sdk/Zyngberry_HW_platfor	Browse
C	hoose file system: default: *	
Target Han	dware Specification	
Provide the This file us The specifi	e path to the hardware specification File exported from Vivado. ually resides in SDK/SDK_Export/hw folder relative to the Vivado project location. ication File and associated bitstream content will be copied into the workspace.	
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7) In the "New Project" window select your new hardware platform and click "Next"

😝 🐵 New Project	
Application Project	-
Create a managed make application project.	
Project name: hello world	
Lider units [head]ana	
S Use default location	
Location: /home/masks/Documents/Xilinx_workspace/Guide_test_s	Browse
Choose file system: default *	
OS Platform: standalone	
Target Hardware	
Hardware Platform: Zyngberry_HW_platform •	New
Processor: ps7_cortexa9_0	•
Target Software	
Language: O C O C++	
Compiler: 32-bit *	
Board Support Package: O Create New hello_world_bsp	
Use existing	Ŧ
(Back Next > Cancel	Finish

8) Select "Hello World" project and click "Finish"

emplates Create one of the availat project.	ble templates to gener	ate a fully-functioning application	6
Available Templates:			
Dhrystone		Let's say 'Hello World' in C.	
Empty Application			
Hello World			
IwIP Echo Server			
Memory Tests			
(?)	< Back	Next > Cancel	Finish

9) Connect your FPGA board to your computer and right click on your application project and select "Run As->Launch on Hardware(System debugger). Your PS should now have created a clock signal for you PL.

10)In the menu bar click "Xilinx Tools->Program FPGA.

Now your program should be running on the FPGA or you are in trouble ;) It is also possible to program your hardware in Vivado but i havn't found out how to program the processor from there yet.