Lab 8

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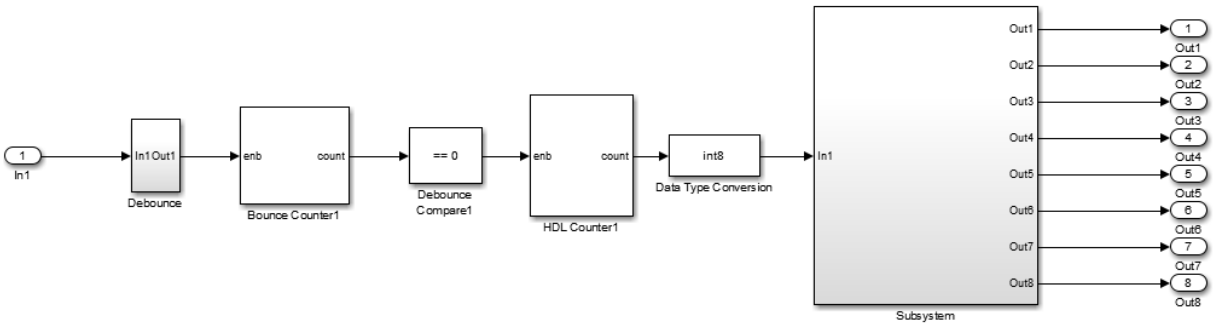
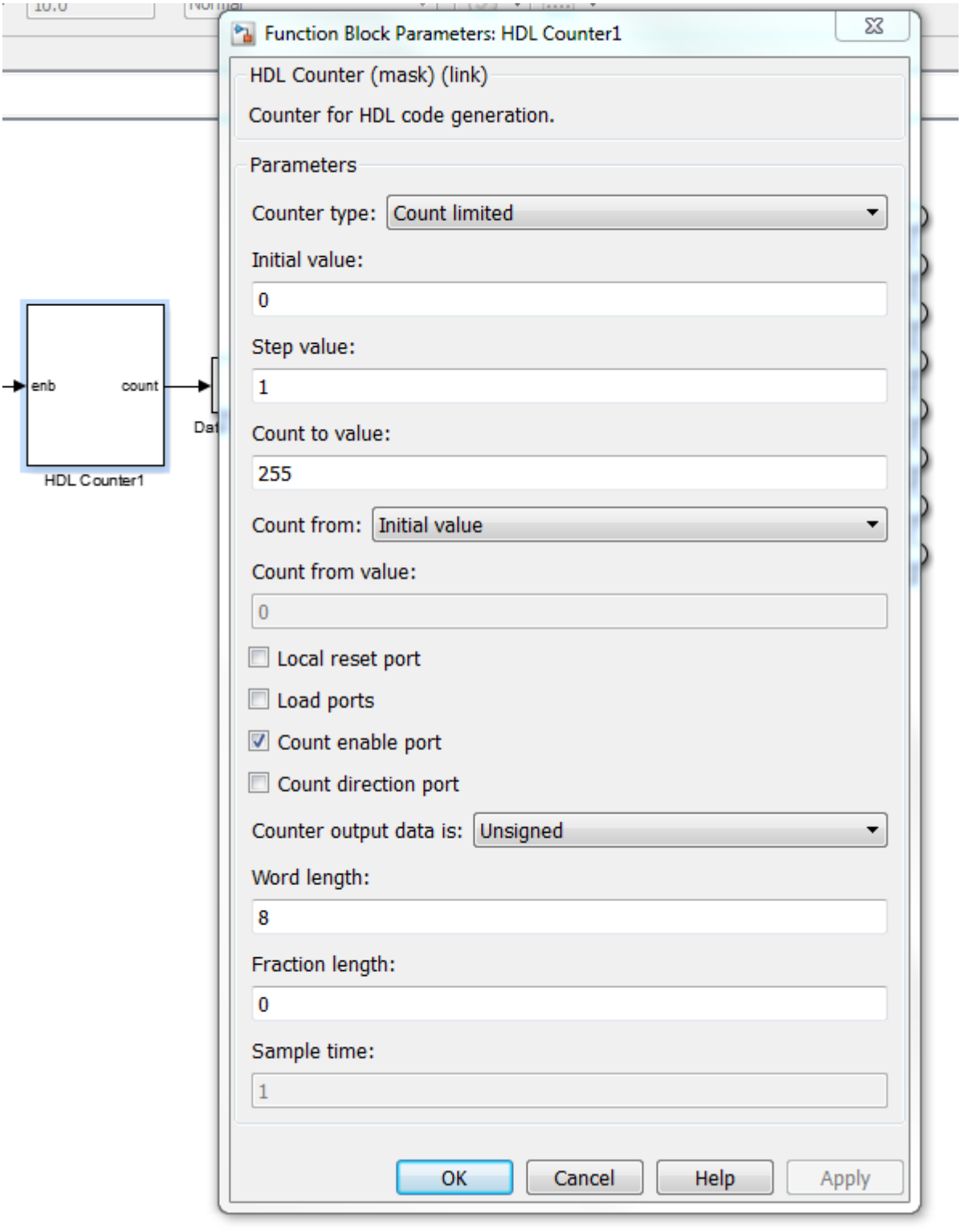
8.1

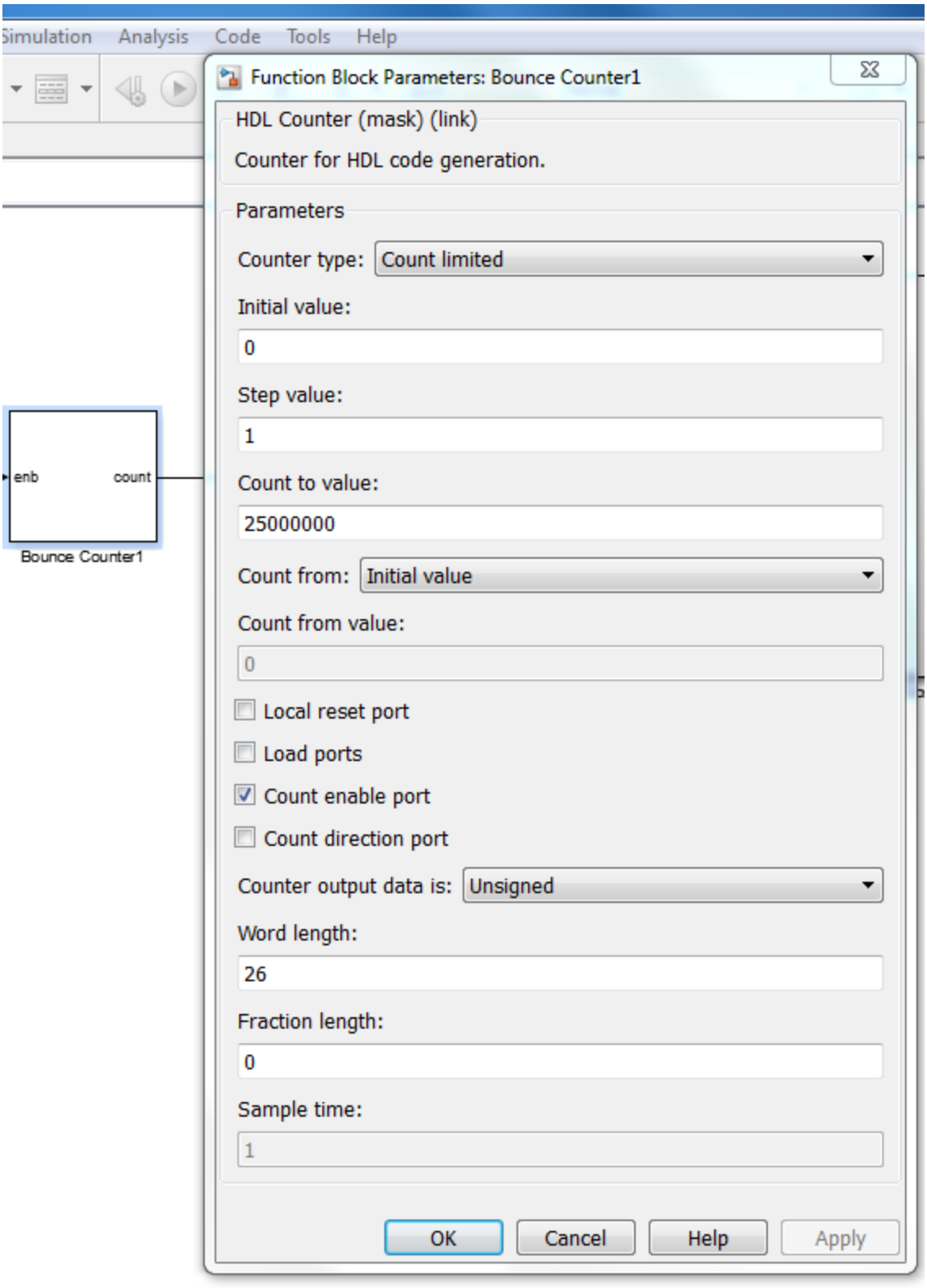


Where In1Out1 is the push button on/off from lab6.

And the subsystem is the bit slicer.

We want the counter to count as 2Hz, which means 2 cycles per second. Since the HDL counter will be counting at a frequency of 50 MHz. We will set the bounce Counter count from 0 to 25000000.

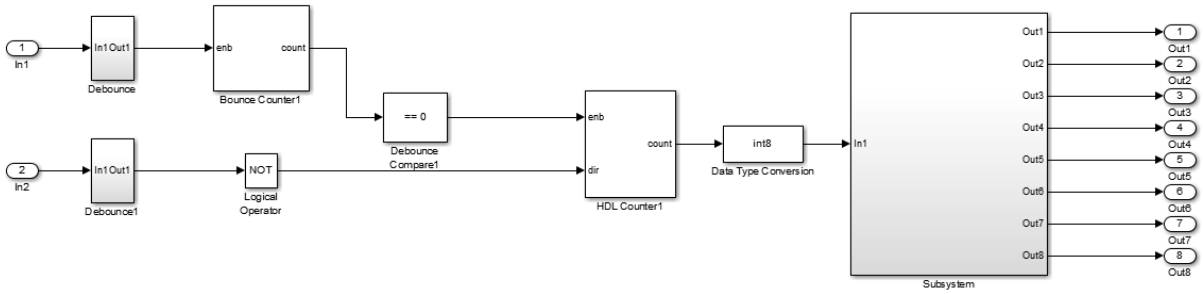

enb
count
HDL Counter1
Function Block Parameters: HDL Counter1
HDL Counter (mask) (link)
Counter for HDL code generation.
Parameters
Counter type: Count limited
Initial value:
0
Step value:
1
Count to value:
255
Count from: Initial value
Count from value:
0
Local reset port
Load ports
Count enable port
Count direction port
Counter output data is: Unsigned
Word length:
8
Fraction length:
0
Sample time:
1
OK
Cancel
Help
Apply


Simulation
Analysis
Code
Tools
Help
enb
count
Bounce Counter1
Function Block Parameters: Bounce Counter1
HDL Counter (mask) (link)
Counter for HDL code generation.
Parameters
Counter type:
Count limited
Initial value:
0
Step value:
1
Count to value:
25000000
Count from:
Initial value
Count from value:
0
Local reset port
Load ports
Count enable port
Count direction port
Counter output data is:
Unsigned
Word length:
26
Fraction length:
0
Sample time:
1
OK
Cancel
Help
Apply

Set Target Interface: Use the center button to control the LEDs to stop/run

Port Name	Port Type	Data Type	Target Platform Interfaces	Bit Range / Address / FPGA Pin
In1	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[4]
Out1	Outport	ufix1	LEDs General Purpose [0:7]	[0]
Out2	Outport	ufix1	LEDs General Purpose [0:7]	[1]
Out3	Outport	ufix1	LEDs General Purpose [0:7]	[2]
Out4	Outport	ufix1	LEDs General Purpose [0:7]	[3]
Out5	Outport	ufix1	LEDs General Purpose [0:7]	[4]
Out6	Outport	ufix1	LEDs General Purpose [0:7]	[5]
Out7	Outport	ufix1	LEDs General Purpose [0:7]	[6]
Out8	Outport	ufix1	LEDs General Purpose [0:7]	[7]

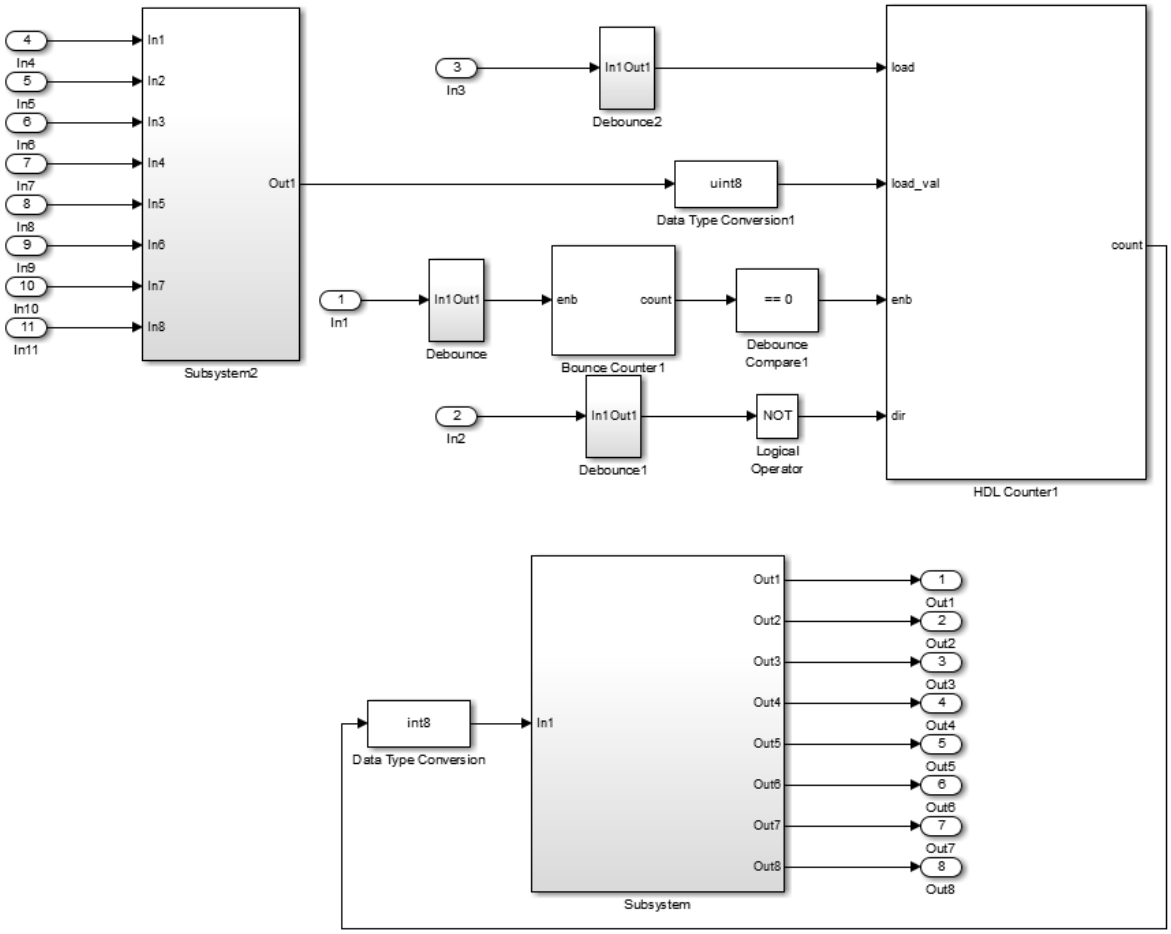
8.2



Set Target Interface: Use the center button to control the LEDs to stop/run; Use the right button to change the direction.

Port Name	Port Type	Data Type	Target Platform Interfaces	Bit Range / Address / FPGA Pin
In1	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[4]
In2	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[1]
Out1	Outport	ufix1	LEDs General Purpose [0:7]	[0]
Out2	Outport	ufix1	LEDs General Purpose [0:7]	[1]
Out3	Outport	ufix1	LEDs General Purpose [0:7]	[2]
Out4	Outport	ufix1	LEDs General Purpose [0:7]	[3]
Out5	Outport	ufix1	LEDs General Purpose [0:7]	[4]
Out6	Outport	ufix1	LEDs General Purpose [0:7]	[5]
Out7	Outport	ufix1	LEDs General Purpose [0:7]	[6]
Out8	Outport	ufix1	LEDs General Purpose [0:7]	[7]

8.3



Subsystem2 is from the previous lab which load the switch and then we translate it into the load value.

Set Target Interface: Use the center button to control the LEDs to stop/run; Use the right button to change the direction. Use the left button to load the switch.

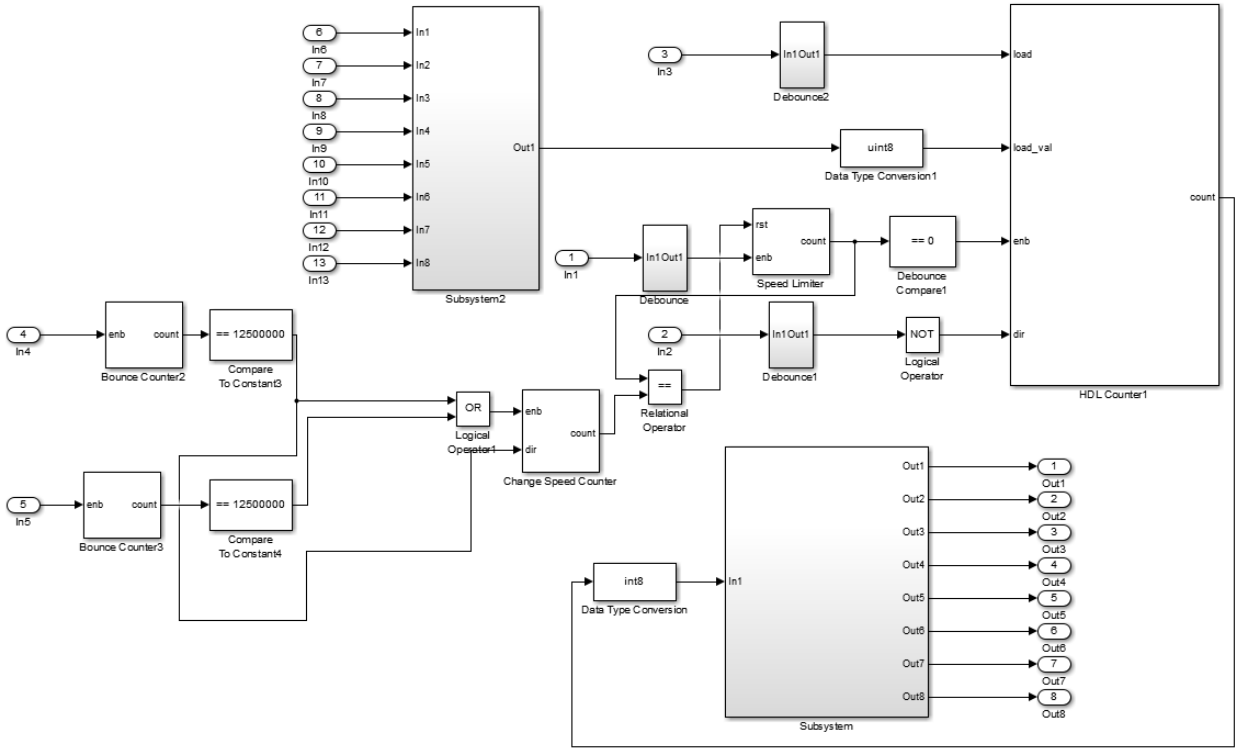
In1	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[4]
In2	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[1]
In3	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[0]

In4	Inport	boolean	DIP Switches [0:7]	[7]
In5	Inport	boolean	DIP Switches [0:7]	[6]
In6	Inport	boolean	DIP Switches [0:7]	[5]
In7	Inport	boolean	DIP Switches [0:7]	[4]
In8	Inport	boolean	DIP Switches [0:7]	[3]
In9	Inport	boolean	DIP Switches [0:7]	[2]
In10	Inport	boolean	DIP Switches [0:7]	[1]
In11	Inport	boolean	DIP Switches [0:7]	[0]

Where input 4 is corresponding to the highest digit and input 11 is the lowest digit.

Out1	Outport	ufix1	LEDs General Purpose [0:7]	[0]
Out2	Outport	ufix1	LEDs General Purpose [0:7]	[1]
Out3	Outport	ufix1	LEDs General Purpose [0:7]	[2]
Out4	Outport	ufix1	LEDs General Purpose [0:7]	[3]
Out5	Outport	ufix1	LEDs General Purpose [0:7]	[4]
Out6	Outport	ufix1	LEDs General Purpose [0:7]	[5]
Out7	Outport	ufix1	LEDs General Purpose [0:7]	[6]
Out8	Outport	ufix1	LEDs General Purpose [0:7]	[7]

8.4



In1	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[4]
In2	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[1]
In3	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[0]
In4	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[3]
In5	Inport	boolean	Push Buttons L-R-U-D-S [0:4]	[2]

In6	Inport	boolean	DIP Switches [0:7]	[7]
In7	Inport	boolean	DIP Switches [0:7]	[6]
In8	Inport	boolean	DIP Switches [0:7]	[5]
In9	Inport	boolean	DIP Switches [0:7]	[4]
In10	Inport	boolean	DIP Switches [0:7]	[3]
In11	Inport	boolean	DIP Switches [0:7]	[2]
In12	Inport	boolean	DIP Switches [0:7]	[1]
In13	Inport	boolean	DIP Switches [0:7]	[0]

Out1	Outport	ufix1	LEDs General Purpose [0:7]	[0]
Out2	Outport	ufix1	LEDs General Purpose [0:7]	[1]
Out3	Outport	ufix1	LEDs General Purpose [0:7]	[2]
Out4	Outport	ufix1	LEDs General Purpose [0:7]	[3]
Out5	Outport	ufix1	LEDs General Purpose [0:7]	[4]
Out6	Outport	ufix1	LEDs General Purpose [0:7]	[5]
Out7	Outport	ufix1	LEDs General Purpose [0:7]	[6]
Out8	Outport	ufix1	LEDs General Purpose [0:7]	[7]