Dymin_RT_Main.vi
Q:\GitHub\DyminSTED4all\LabviewCode\Dymin_RT_Main.vi
Last modified on 8/18/2023 at 11:31 AM
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Dymin_RT_Main.vi

Calibrate_enum.ctl
Requirements:
Labview 2016 (32 bit)
Labview Real-Time Module
Labview FPGA Module
Compile Cloud access (Sign up at https://www.ni.com/en-us/support/
documentation/supplemental/14/compile-faster-with-the-labview-fpga-
compile-cloud-service.html)
OR Xilinx Compilation Tools to compile the code on your FPGA.
.
Instructions:
1. Check the myRIO target IP address in the project and make sure the
target IP address is correct.
2. Run this VI.

AOM Voltages:
IN0=A/AO0
IN1=C/AO1
IN2=C/AO0
IN3=A/AO0

Voltage conversion (raw voltages from FPGA):
MSP Connectors:
Voltage=RawDataValue*4.883 mV
MXP Connectors:
Voltage=RawDataValue*1.221 mV
Measured with 50Ohm
Voltage=RawDataValue*2.1mV

I have calibrated the program to the voltage output into
50 Ohms, you will need to calibrate it to your system.

SET YOUR PIXEL CLOCK TO THIS VALUE

PIX CLK period (us)
0

PIX CLK period (bits)
0

PIX CLK Measured (us)
0

PIX CLK Measured (bits)
0

AOM Units
Voltage (Volts) — Power (mW)

AOM P or V
0
0
0.08
0
0

Threshold (counts)
0
0
0
0
0

DyMIN Step Time (us)
0
0
0
0
0

Stop

Dymin On?

Laser Wait (us)
0

Wait time for laser power to change

Size of time bits
1 bit=12.5 ns

Calibrate?
Use Voltage Only

AOM Voltage
0
0
0.08
0
0

Steps including dummy steps
All Step Times (us)
0
0
0
0
0
0
0
0
0
0

Time (#80MHz periods)
0
0
0
0
0
0
0
0

error in
status   code
0

source

error out
status   code
d 0

source

Stop

Threshold (counts)

Theshold (counts)

Dymin On?

Laser Wait (us)

DyMIN Step Time (us)

Max AOM Voltage

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error in

<B>error in</B> can accept error information wired from VIs previously called. Use this information to decide if any functionality should be bypassed in the event of errors from other VIs.

Right-click the <B>error in</B> control on the front panel and select <B>Explain Error</B> or <B>Explain Warning</B> from the shortcut menu for more information about the error.

status

<B>status</B> is TRUE (X) if an error occurred or FALSE (checkmark) to indicate a warning or that no error occurred.

Right-click the <B>error in</B> control on the front panel and select <B>Explain Error</B> or <B>Explain Warning</B> from the shortcut menu for more information about the error.

code

<B>code</B> is the error or warning code.

Right-click the <B>error in</B> control on the front panel and select <B>Explain Error</B> or <B>Explain Warning</B> from the shortcut menu for more information about the error.

source

<B>source</B> describes the origin of the error or warning.

Right-click the <B>error in</B> control on the front panel and select <B>Explain Error</B> or <B>Explain Warning</B> from the shortcut menu for more information about the error.

Calibrate?

AOM Units

AOM P or V

AOM P or V

error out

<B>error out</B> passes error or warning information out of a VI to be used by other VIs.

Right-click the <B>error out</B> indicator on the front panel and select <B>Explain Error</B> or <B>Explain Warning</B> from the shortcut menu for more information about the error.

status

code

source

AOM Voltage

Max AOM Voltage

Time (#80MHz periods)

dT (# 80MHz periods)

PIX CLK Measured (bits)

PIX CLK Measured (us)

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PIX CLK period (bits)

PIX CLK period (us)
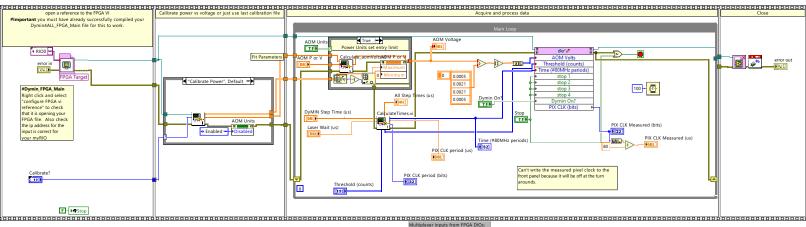
All Step Times (us)

Max AOM Voltage

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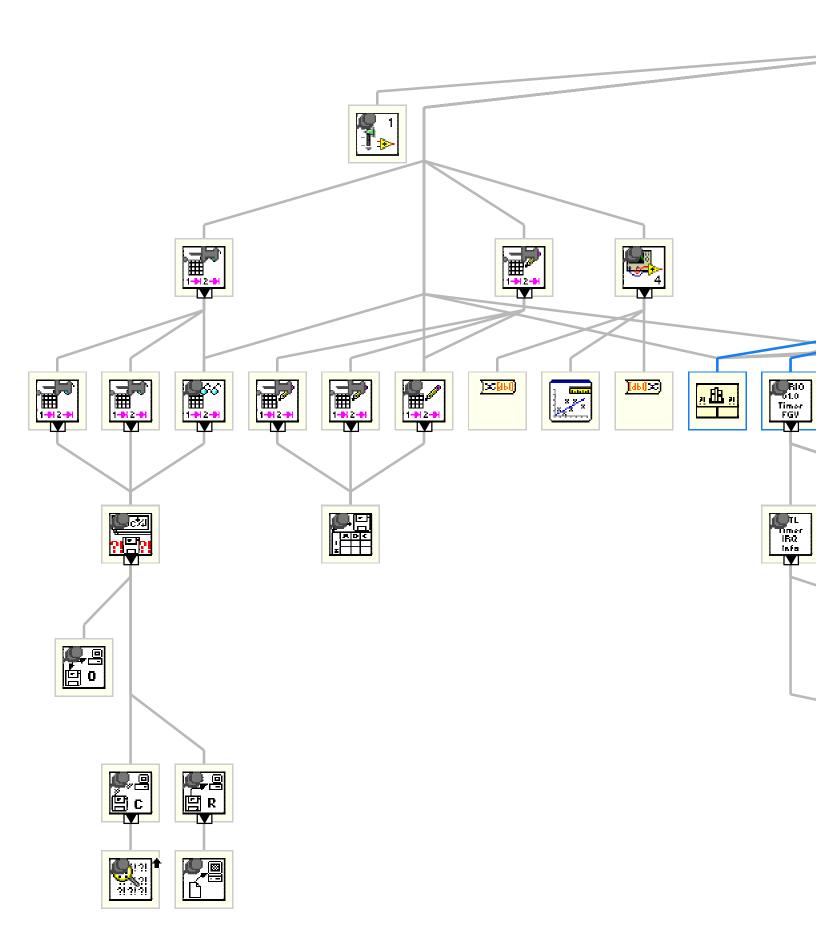Q:\GitHub\DyminSTED4all\LabviewCode\Dymin_RT_Main.vi
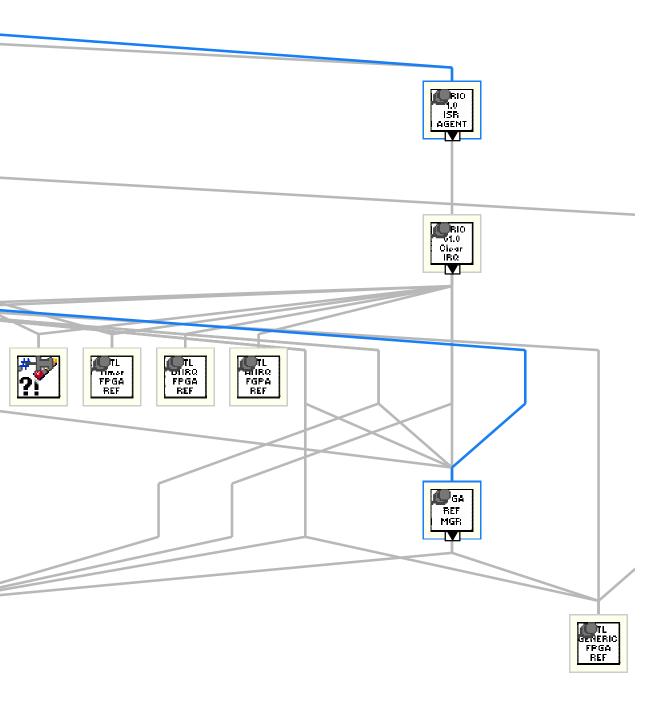Last modified on 8/18/2023 at 11:31 AM
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Calculate_aomVolts.vi
Q:\GitHub\DyminSTED4all\LabviewCode\Calculate_aomVolts.vi

CalculateTimes.vi
Q:\GitHub\DyminSTED4all\LabviewCode\CalculateTimes.vi

Calibrate_power.vi
Q:\GitHub\DyminSTED4all\LabviewCode\Calibrate_power.vi

myRIO v1.0 Reset FPGA.vi
C:\Program Files (x86)\National Instruments\LabVIEW 2016\vi.lib\myRIO\Common\Instrument Driver Framework\myRIO v1.0\myRIO v1.0 Reset FPGA.vi

myRIO v1.0 Timer IRQ Info FGV.vi
C:\Program Files (x86)\National Instruments\LabVIEW 2016\vi.lib\myRIO\Common\Instrument Driver Framework\myRIO v1.0\IRQ\vis\myRIO v1.0 Timer IRQ Info FGV.vi

Error Cluster From Error Code.vi
C:\Program Files (x86)\National Instruments\LabVIEW 2016\vi.lib\Utility\error.llb\Error Cluster From Error Code.vi

myRIO v1.0 ISR Agent.vi
C:\Program Files (x86)\National Instruments\LabVIEW 2016\vi.lib\myRIO\Common\Instrument Driver Framework\myRIO v1.0\IRQ\vis\myRIO v1.0 ISR Agent.vi

FPGA Ref Manager.vi
C:\Program Files (x86)\National Instruments\LabVIEW 2016\vi.lib\myRIO\Common\Instrument Driver Framework\Utilities\vis\FPGA Ref Manager.vi

myRIO v1.0 IRQ Info FGV.vi
C:\Program Files (x86)\National Instruments\LabVIEW 2016\vi.lib\myRIO\Common\Instrument Driver Framework\myRIO v1.0\IRQ\vis\myRIO v1.0 IRQ Info FGV.vi

Calibrate_control.ctl
Q:\GitHub\DyminSTED4all\LabviewCode\Calibrate_control.ctl

Utilities.lvlib:Reset myRIO.vi
C:\Program Files (x86)\National Instruments\LabVIEW 2016\vi.lib\myRIO\Instrument Drivers\Utilities\vis\Reset myRIO.vi

AOM_PorV_control_single.ctl
Q:\GitHub\DyminSTED4all\LabviewCode\AOM_PorV_control_single.ctl