Stave DAQ Updates

Testing two collobarative software websites

- Wiki http://phyweb.lbl.gov/atlaswiki/index.php?title=%22ATLAS_Upgrade_-_Stave_DAQ%22#Code

- Lcg savannah

https://savannah.cern.ch/projects/atlasstavedaq/

- We will experiment with both of these for now and see which will better in the long run

Code repository

- BNL is working on a code repository on the US ATLAS server.
- We will either use subversion or Perforce
- Again, we will experiment with both and see which works better

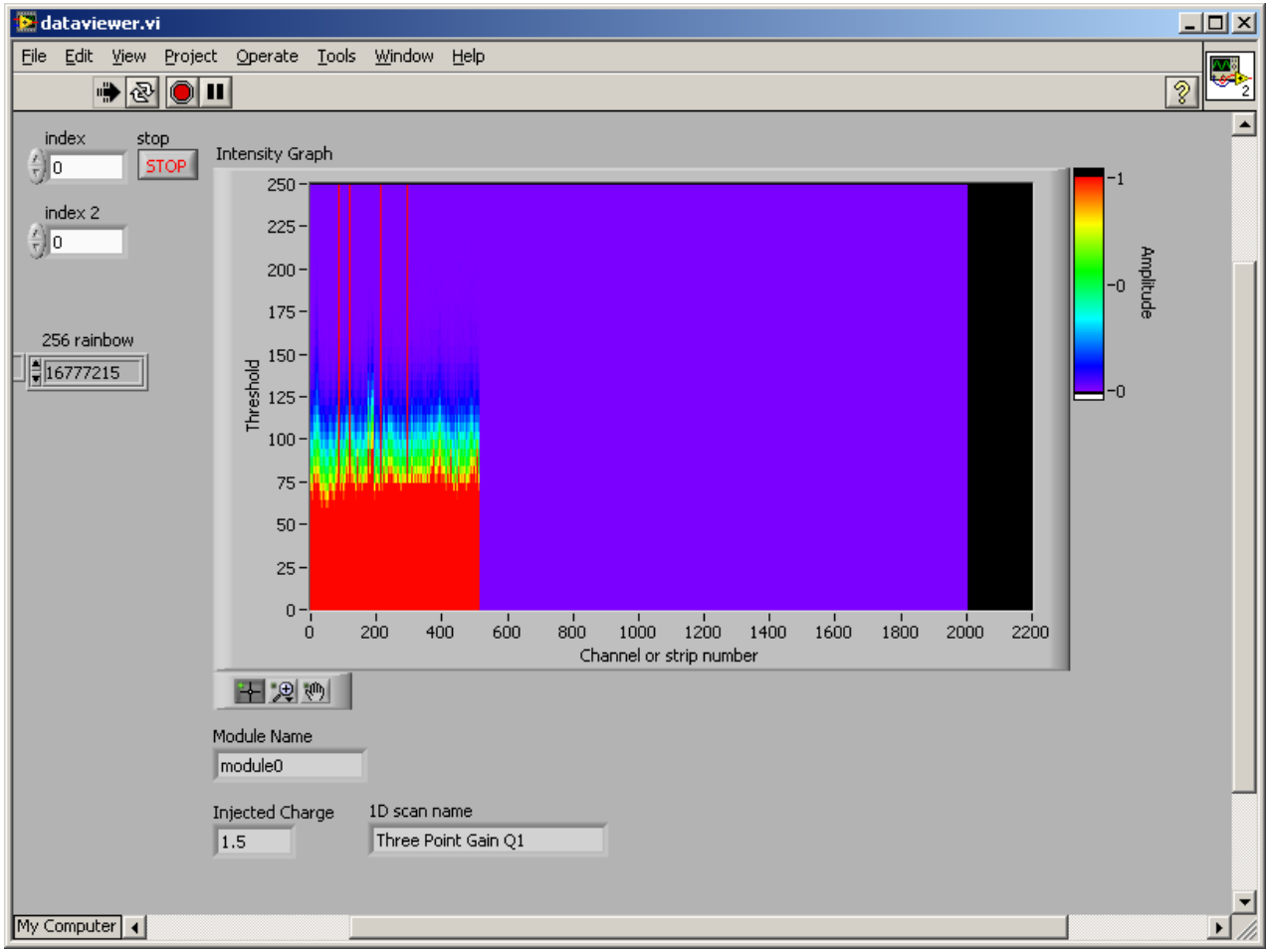
Code

- Currently scaling the system up to the case of more modules
- Planning a file viewer program where we can view graphs, data, export data to excel, take differences of data, etc.

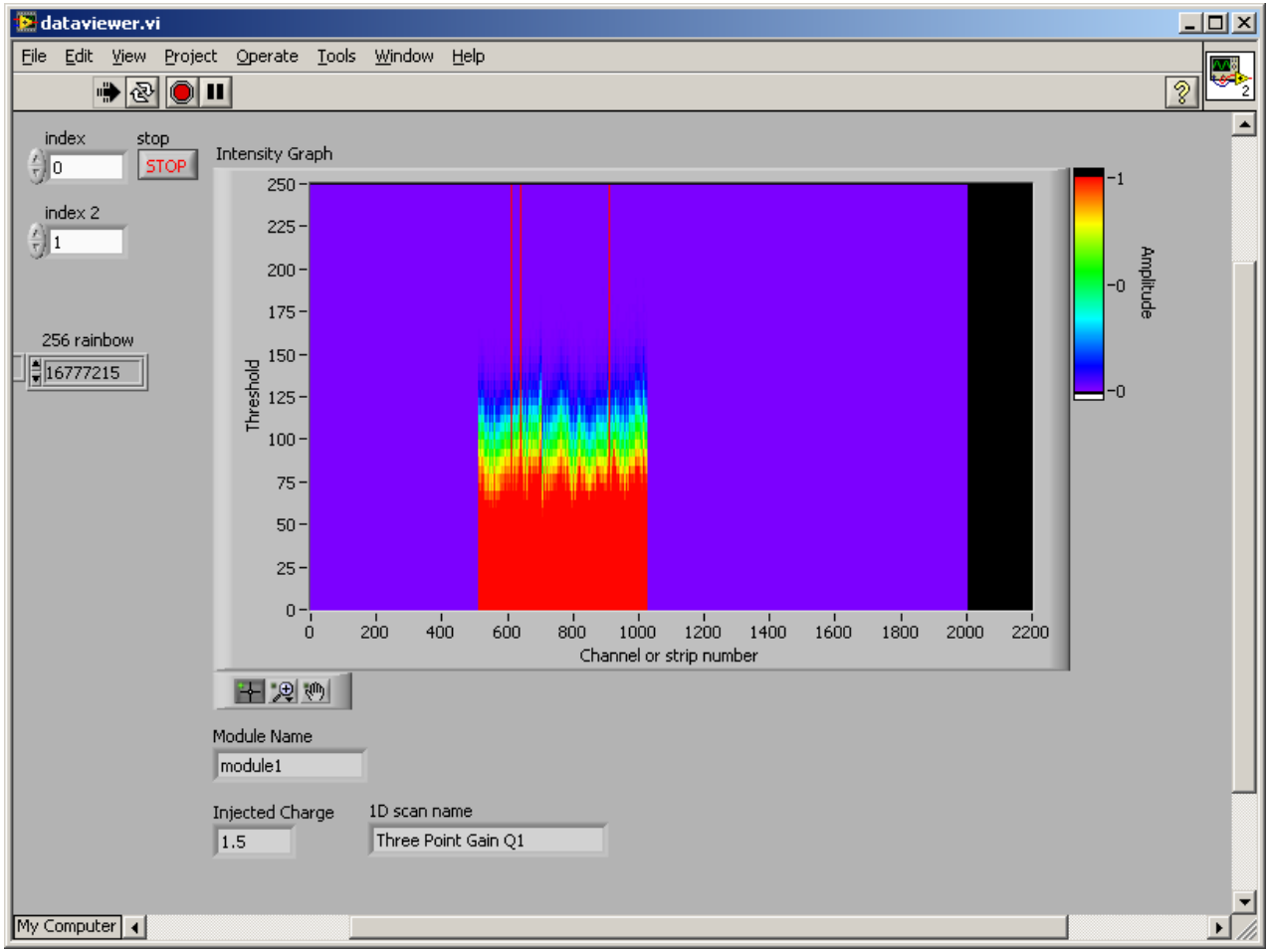
6 modules have been read out

- Results of a simple data viewer program will be shown
- These are results from the threshold scan of the first injected charge (1.5 fC) of the three point gain test.

Module 0


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
0
stop
STOP
index 2
0
256 rainbow
16777215
Intensity Graph
Threshold
250
225
200
175
150
125
100
75
50
25
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module0
Injected Charge
1.5
1D scan name
Three Point Gain Q1
My Computer

Module 1


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
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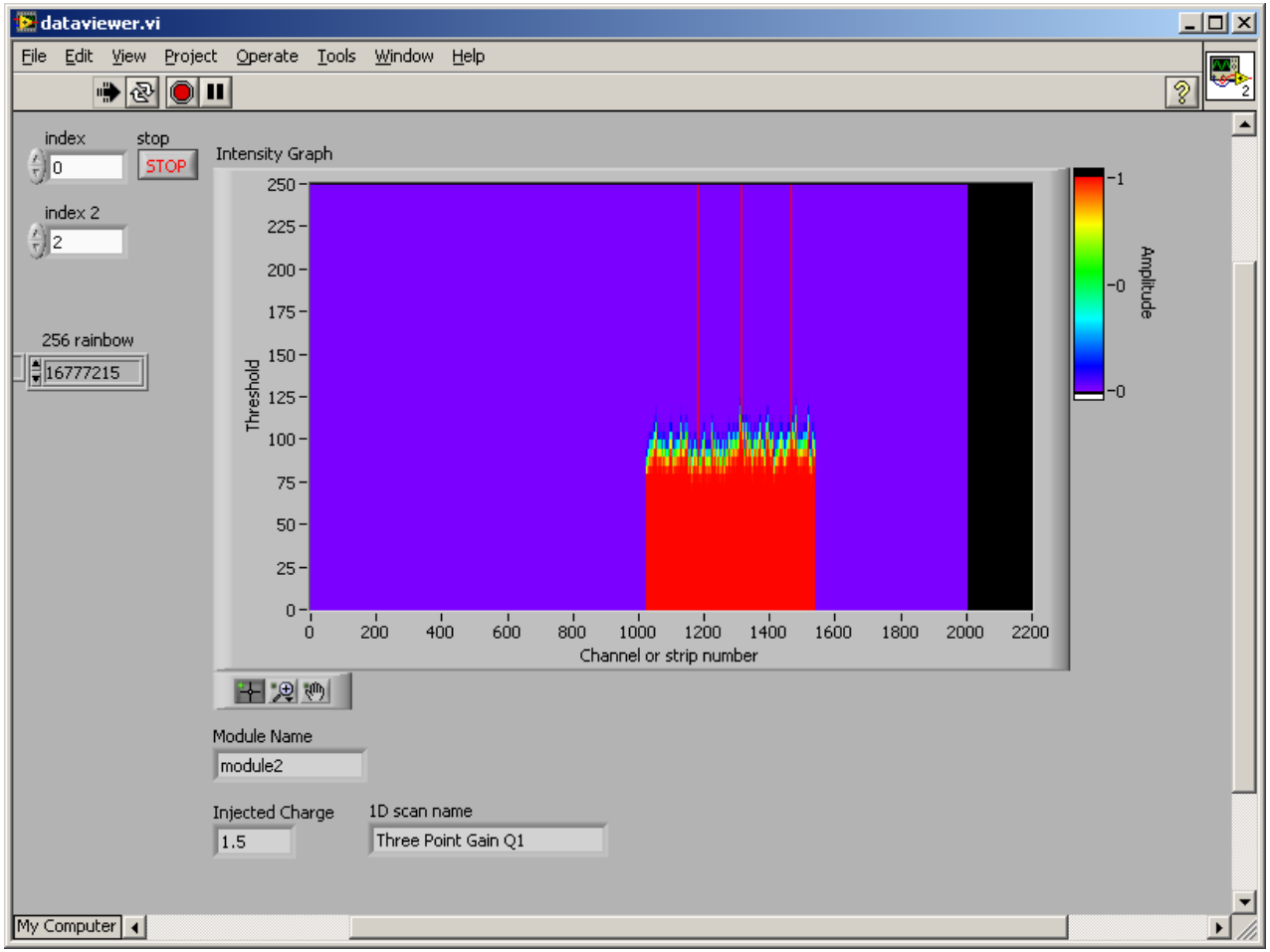
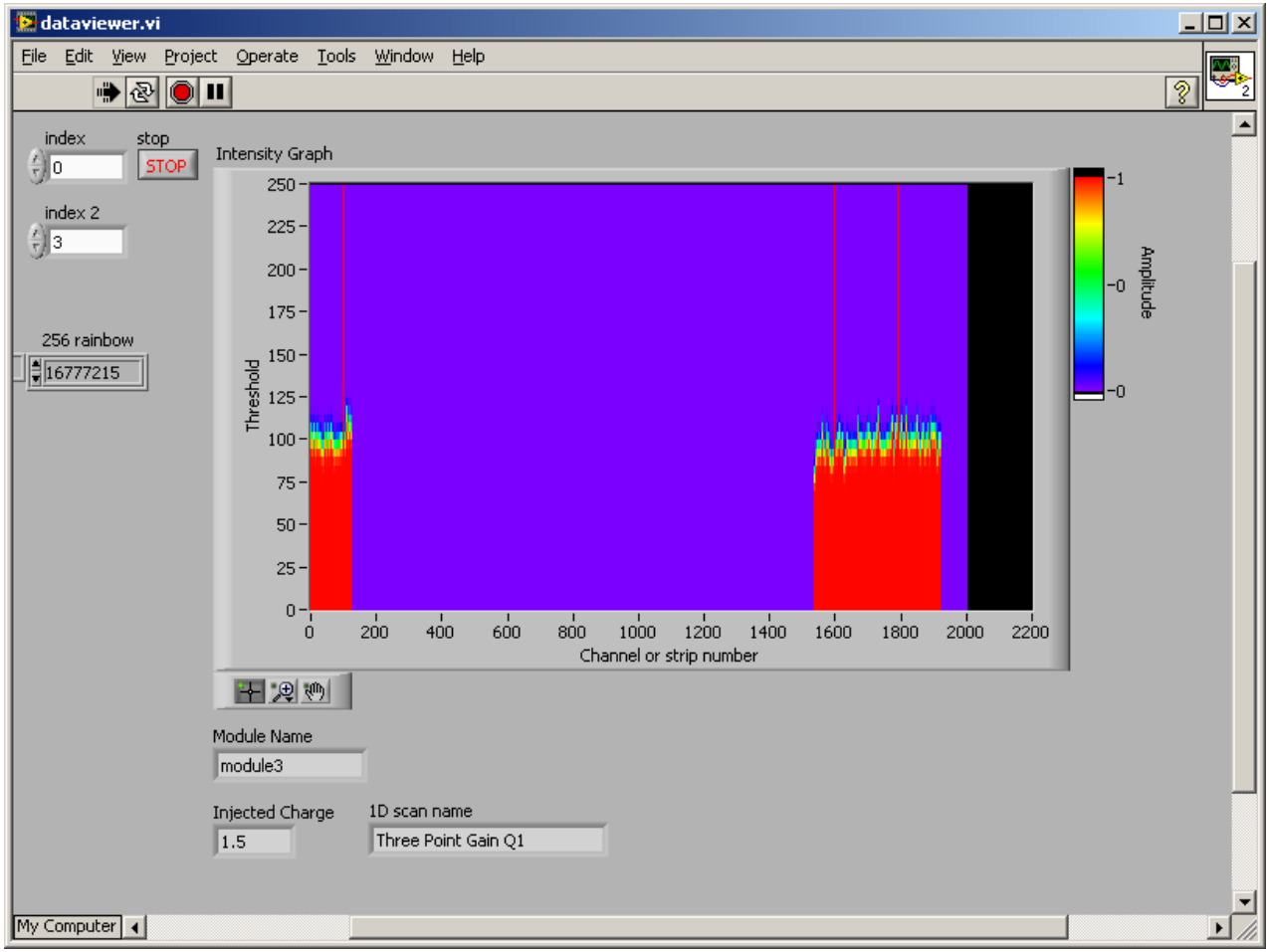
stop
STOP
index 2
1
256 rainbow
16777215
Intensity Graph
Threshold
250
225
200
175
150
125
100
75
50
25
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
Amplitude
1
0
0
Module Name
module1
Injected Charge
1.5
1D scan name
Three Point Gain Q1
My Computer

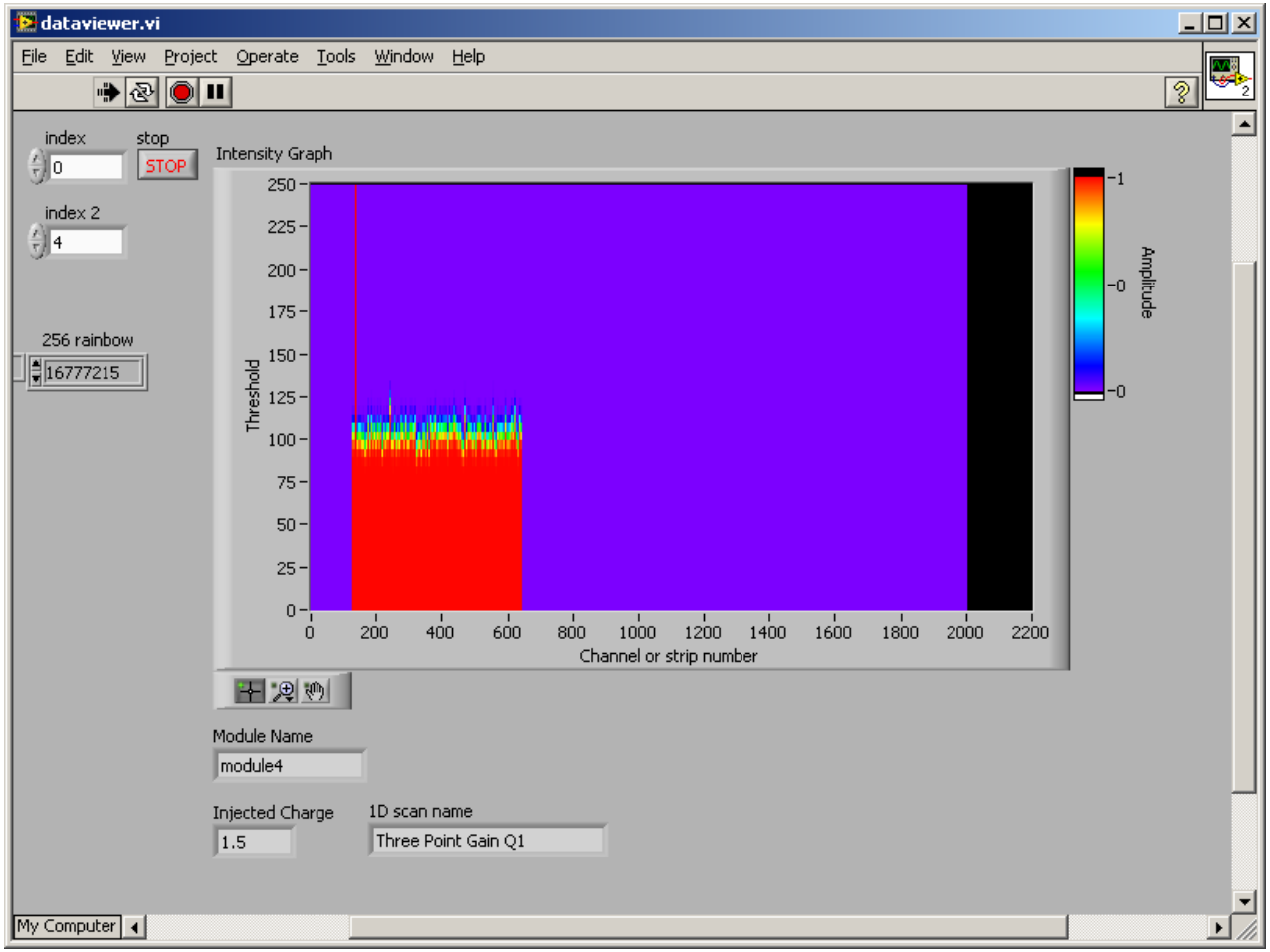
Module 2


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
0
stop
STOP
index 2
2
256 rainbow
16777215
Intensity Graph
Threshold
250
225
200
175
150
125
100
75
50
25
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module2
Injected Charge
1.5
1D scan name
Three Point Gain Q1
My Computer

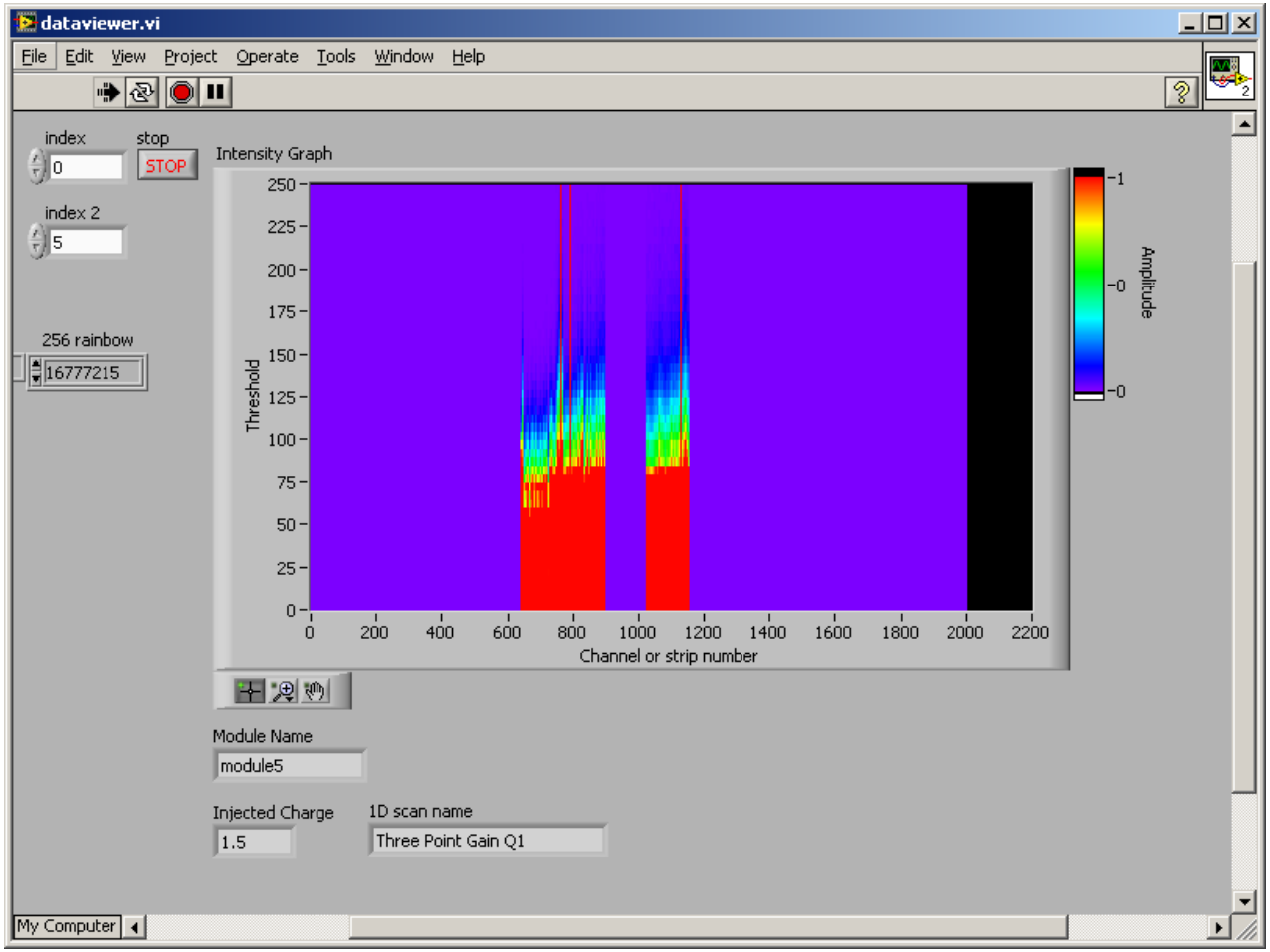
Module 3


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
0
stop
STOP
index 2
3
256 rainbow
16777215
Intensity Graph
Threshold
250
225
200
175
150
125
100
75
50
25
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module3
Injected Charge
1.5
1D scan name
Three Point Gain Q1
My Computer

Module 4


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
0
stop
STOP
index 2
4
256 rainbow
16777215
Intensity Graph
Threshold
250
225
200
175
150
125
100
75
50
25
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module4
Injected Charge
1.5
1D scan name
Three Point Gain Q1
My Computer

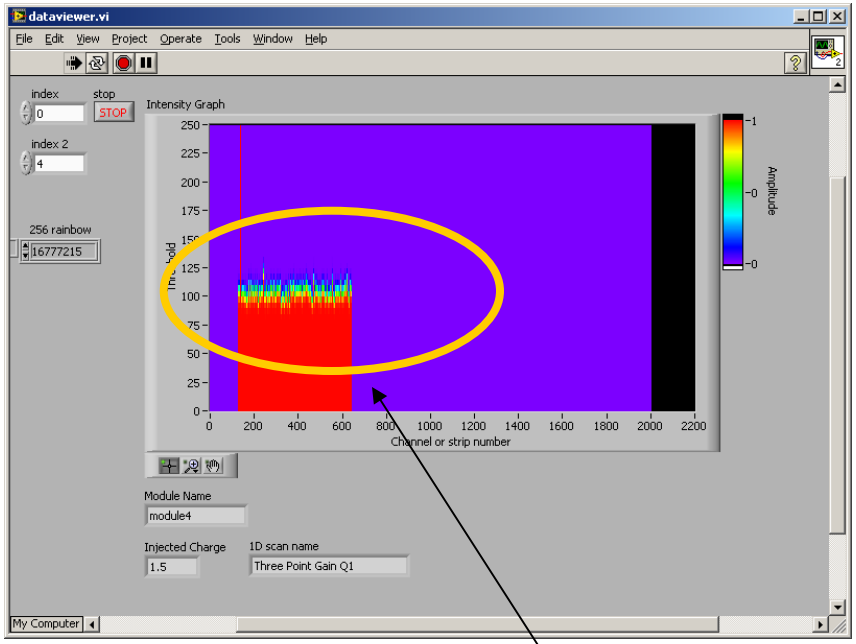
Module 5

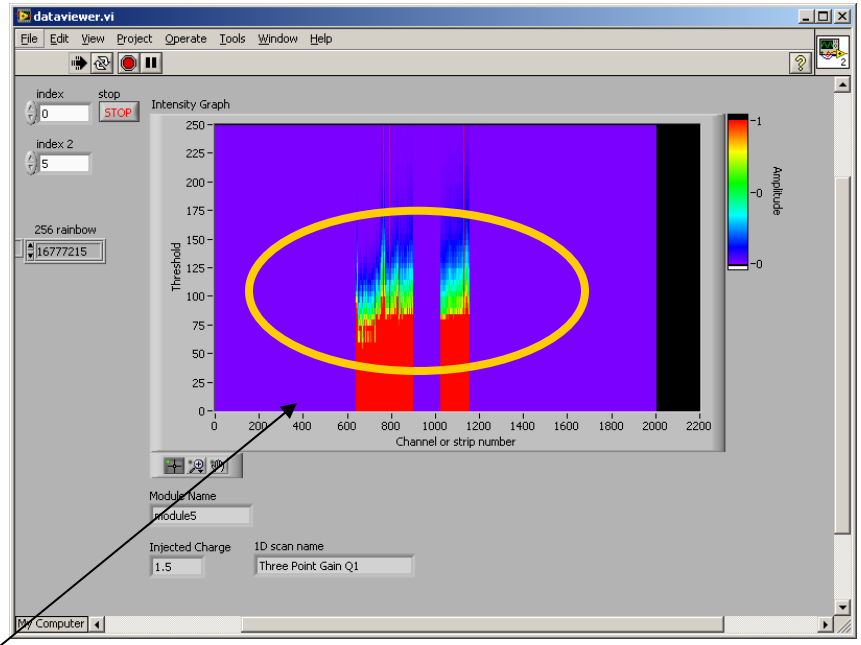

dataviewer.vi
File Edit View Project Operate Tools Window Help
index
0
stop
STOP
index 2
5
256 rainbow
16777215
Intensity Graph
Threshold
250
225
200
175
150
125
100
75
50
25
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module5
Injected Charge
1.5
1D scan name
Three Point Gain Q1
My Computer

Detectors on modules 0,1, and 5

- There are detectors on 0, 1, and 5
- Look back at slides for these modules and notice that there is more noise (more spread in the occupancy in these modules) during the transition from 1 to 0.
- This is because no high voltage was applied during these tests. The noise is high as we expect.

Comparison of 4 and 5





Module 4

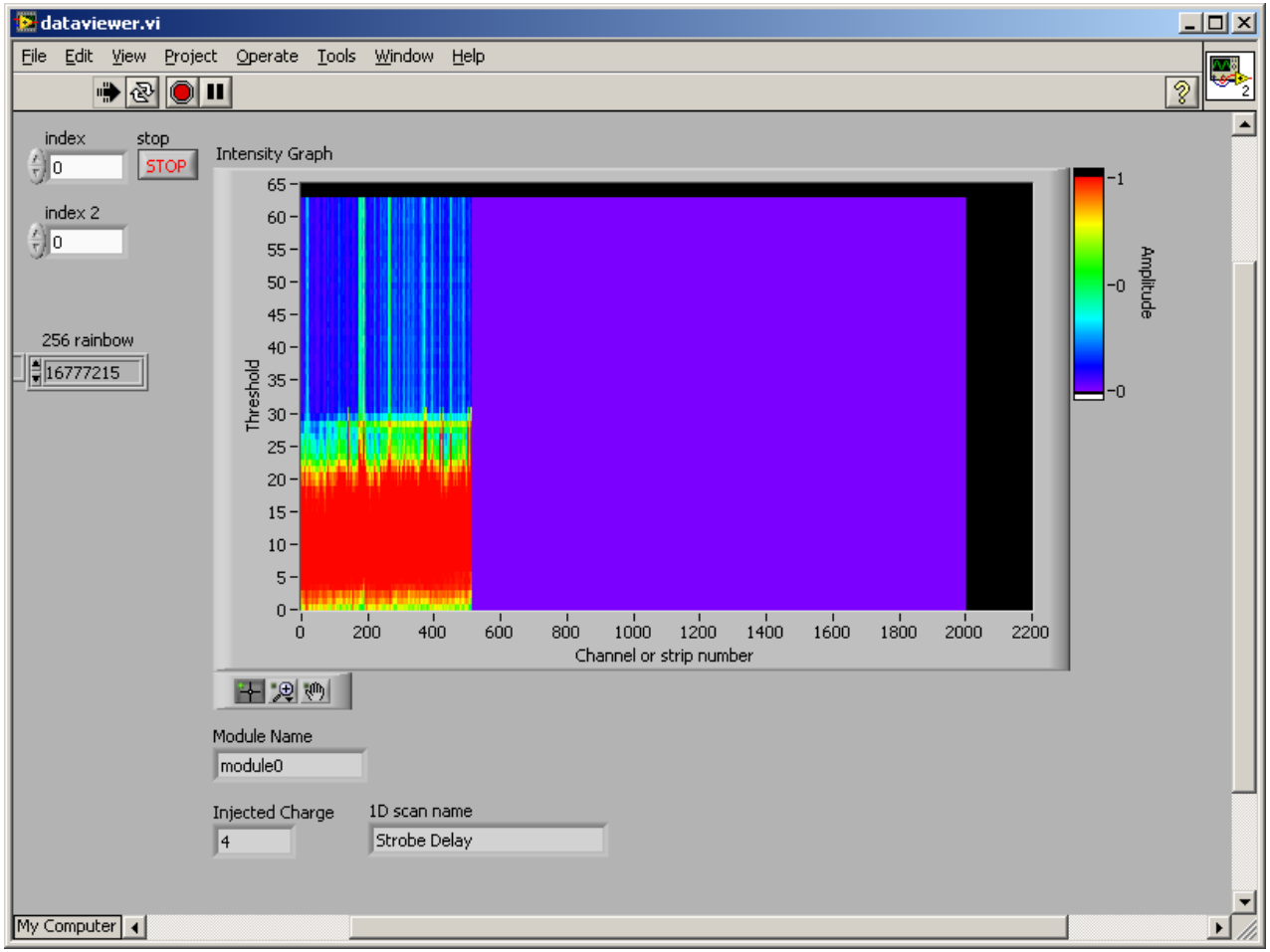
Module 5

There is more noise on module 5 since there is a detector on it with no high voltage applied

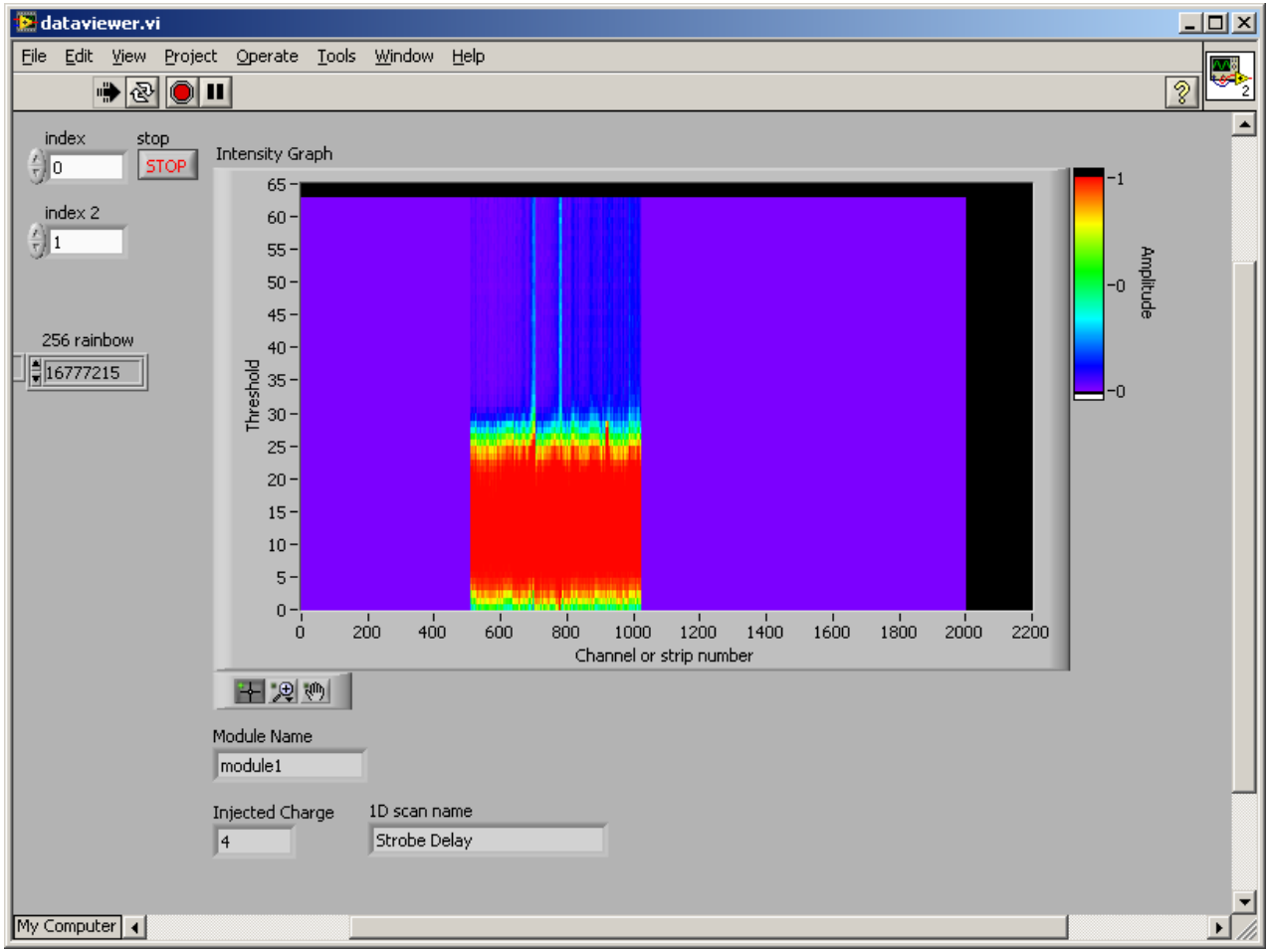
Strobe Delay Test Results

- Results from strobe delay test for all 6 modules

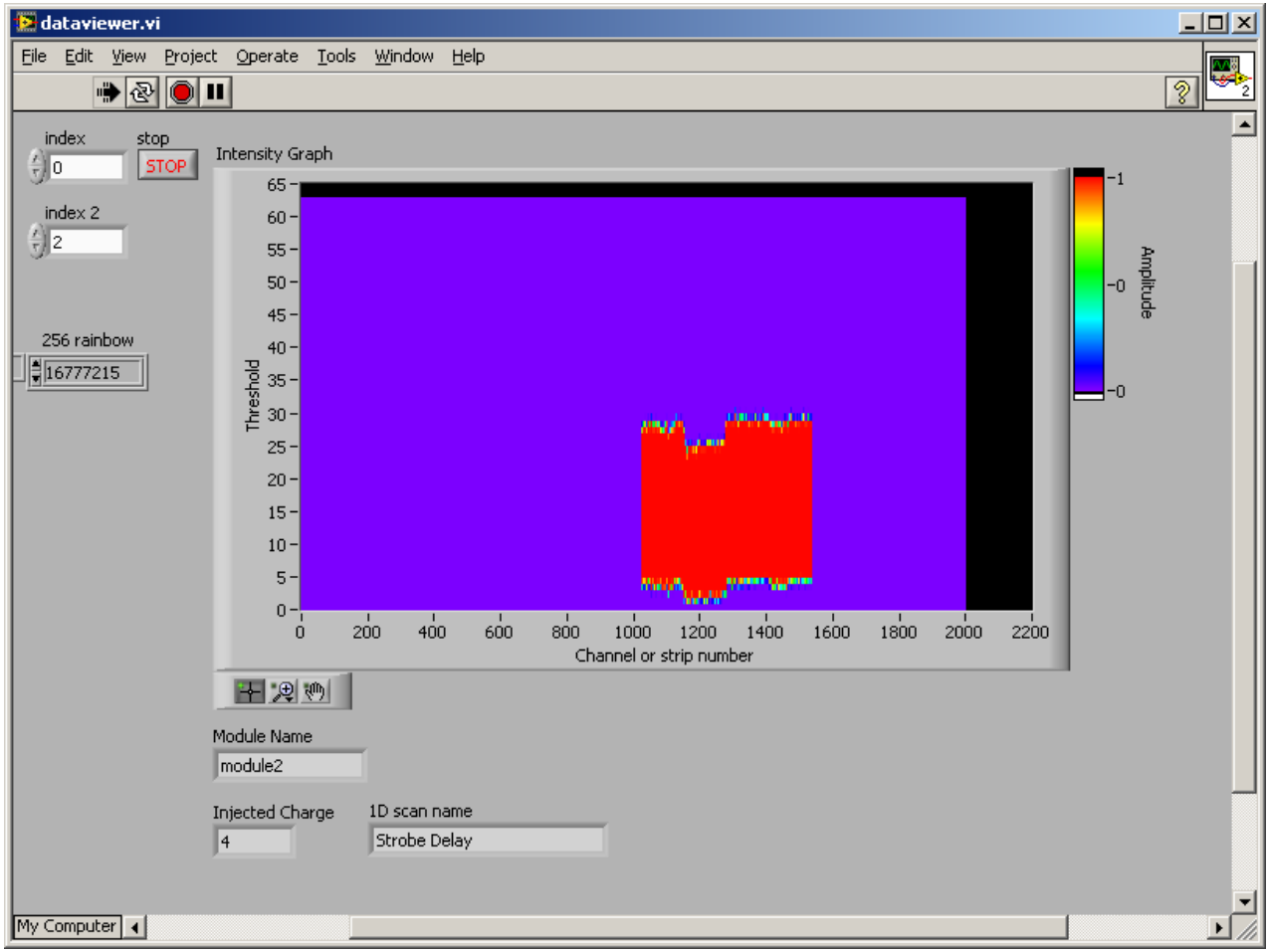
Module 0


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
0
stop
STOP
index 2
0
256 rainbow
16777215
Intensity Graph
Threshold
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module0
Injected Charge
4
1D scan name
Strobe Delay
My Computer

Module 1


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
0
stop
STOP
index 2
1
256 rainbow
16777215
Intensity Graph
Threshold
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module1
Injected Charge
4
1D scan name
Strobe Delay
My Computer

Module 2


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
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stop
STOP
index 2
2
256 rainbow
16777215
Intensity Graph
Threshold
65
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45
40
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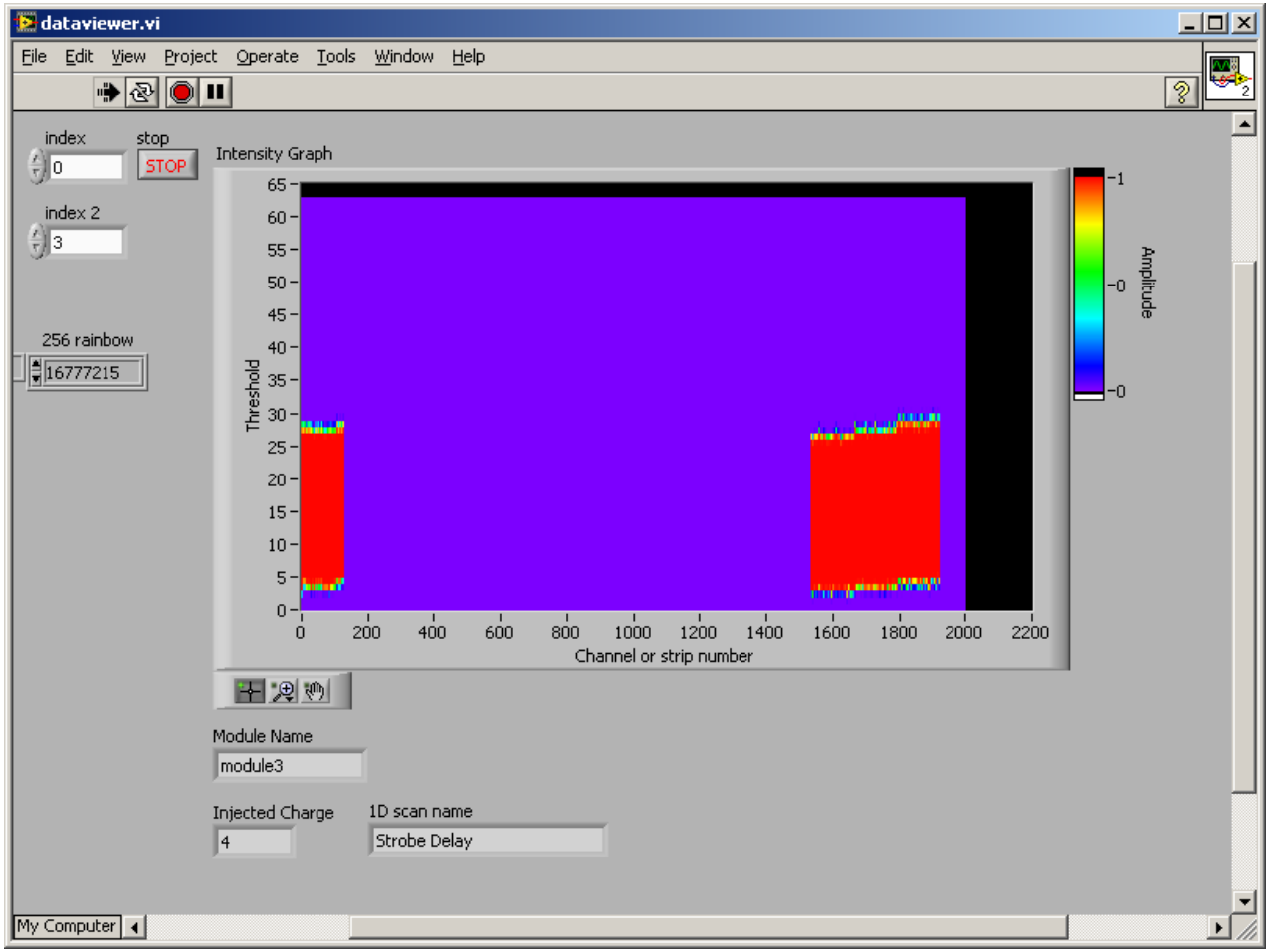
30
25
20
15
10
5
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module2
Injected Charge
4
1D scan name
Strobe Delay
My Computer

Module 3


dataviewer.vi
File Edit View Project Operate Tools Window Help
index
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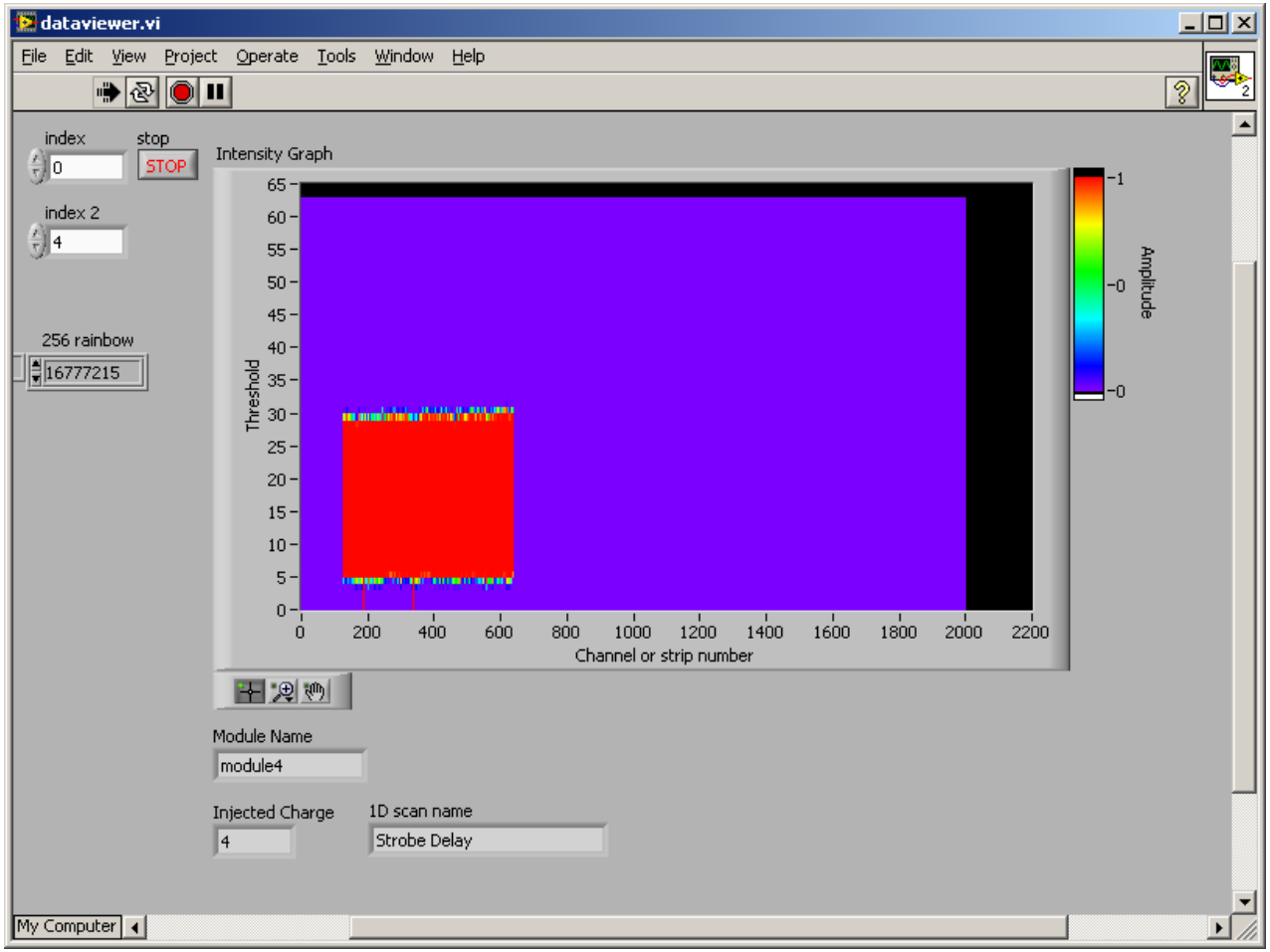
stop
STOP
index 2
3
256 rainbow
16777215
Intensity Graph
Threshold
Channel or strip number
Amplitude
Module Name
module3
Injected Charge
4
1D scan name
Strobe Delay
My Computer

Module 4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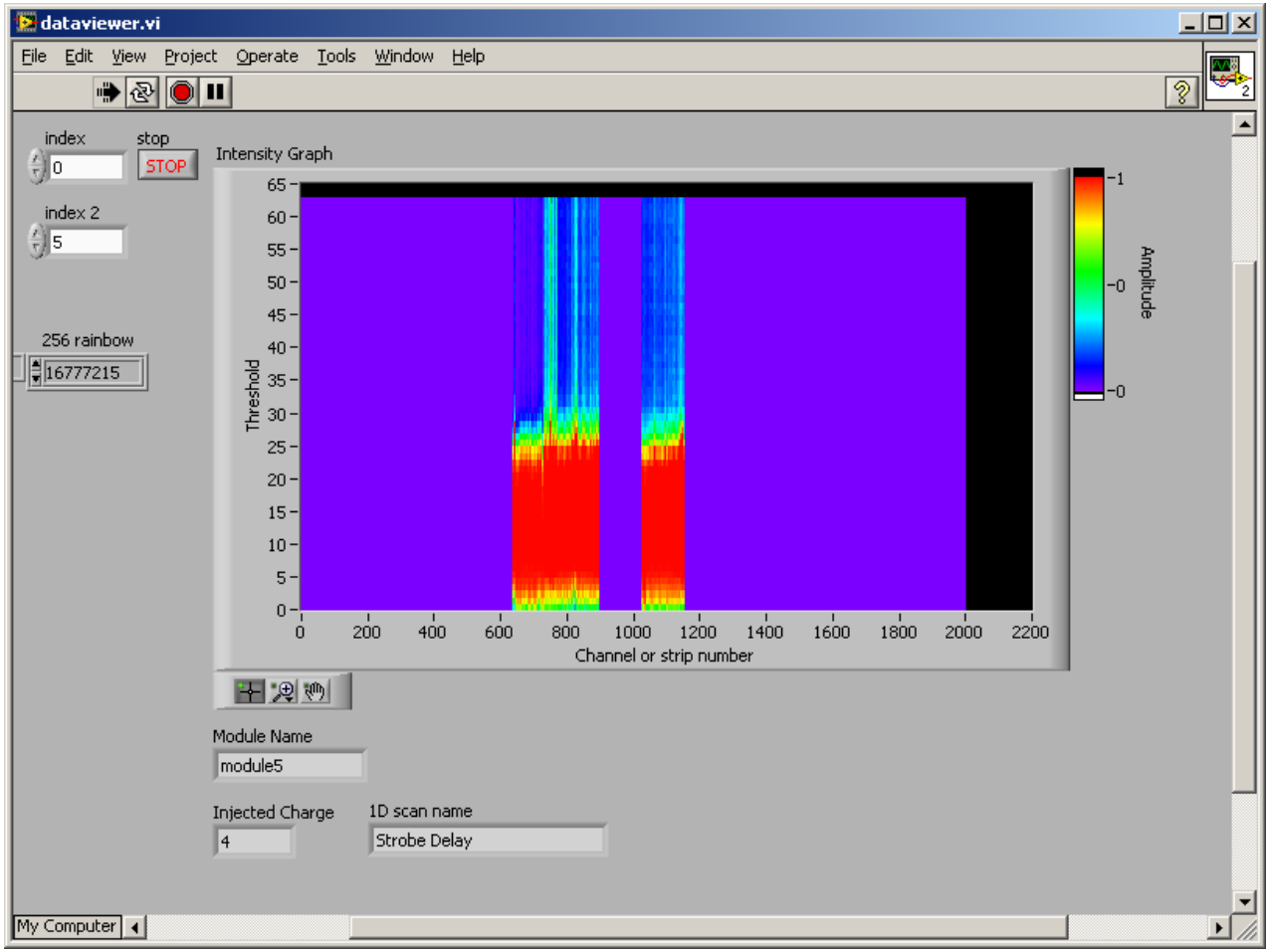
Channel or strip number
Amplitude
Module Name
module4
Injected Charge
4
1D scan name
Strobe Delay
My Computer

Module 5


dataviewer.vi
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index
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stop
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index 2
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256 rainbow
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Intensity Graph
Threshold
65
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30
25
20
15
10
5
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200
Channel or strip number
1
0
0
Amplitude
Module Name
module5
Injected Charge
4
1D scan name
Strobe Delay
My Computer

Conclusions/Future things to work on

- 6 modules have been readout
- Need to scale analysis routines up to the case of more modules
- Two more tests (external trigger from a radiation source) and double trigger tests have been written. Need to work on analysis routines for these.
- Need to make tests more automatic as well.