Spectra Command/Response Timings

P Protocol

8 July 2008

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Contents

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[1]$Header: d:/Binder2/Timings/RCS/TimingsP.tex,v 1.4 2008-07-08 11:50:52-07 Hamilton Exp Hamilton $
[2]tocdepth = 2

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1 Test Background

1. 18JAN07: Test with the data capture being done between the GlassKeyboard and the Spectra II. This test was run at 9600 baud. (Appendix A.1, page 4)

2. 18JAN07: Test with the data capture being done between the GlassKeyboard and the Spectra III. This test was run at 9600 baud. (Appendix A.2, page 7)

3. 18JAN07: Test with the data capture being done between the GlassKeyboard and the Spectra IV. This test was run at 9600 baud. (Appendix A.3, page 10)

2 Test Results

1. To within a reasonable margin of error, the Spectra II, Spectra III and Spectra IV had almost identical response times to many pan/tilt commands.

2. P Protocol commands get their response slightly slower than is the case with D Protocol. However this is probably not noticable to most users. (Human and software types.)

A   Results from P Protocol Data Captured Response Times

A.1   Results for run s2p

A.1.1   Test Details

This is from testing with a Spectra II.

There were this many reply times that were analyzed:

```
1       4478 lines in S2P.TIM
```

A.1.2   Typical response times

The full set of response times are plotted in Figure 2, page 6.

```
    s2p.typ
  1      1,  0.001047
  2      2,  0.002349
  3      3,  0.001048
  4      4,  0.002134
  5      5,  0.001035
  6      6,  0.002857
  7      7,  0.001048
  8      8,  0.002283
  9      9,  0.001042
 10     10,  0.006600
 11     11,  0.001041
 12     12,  0.003886
 13     13,  0.001041
 14     14,  0.003578
 15     15,  0.001044
 16     16,  0.001567
 17     17,  0.000895
 18     18,  0.001509
 19     19,  0.000898
 20     20,  0.003301
 21     21,  0.001042
 22     22,  0.003790
 23     23,  0.001042
 24     24,  0.002132
 25     25,  0.001052
```

A.1.3   The minimum response times

All response times are plotted in Figure 1, page 5 by number of identical responses and their duration.

```
    s2p.min
  1   4420,  0.000010
  2   1999,  0.000859
  3   2845,  0.000866
  4   3763,  0.000866
  5   1233,  0.000867
  6   1333,  0.000867
```

```
  7   2343,  0.000869
  8   3391,  0.000869
  9   3715,  0.000869
 10   1451,  0.000871
```

A.1.4   The maximum response times

All response times are plotted in Figure 1, page 5 by number of identical responses and their duration.

```
    s2p.max
  1    650,  0.005728
  2    380,  0.005800
  3     96,  0.006000
  4     34,  0.006268
  5    126,  0.006361
  6     10,  0.006600
  7    744,  0.006726
  8     70,  0.006778
  9    738,  0.009001
 10    548,  0.010863
```

A.1.5   The most common response times

All response times are plotted in Figure 1, page 5 by number of identical responses and their duration.

```
    s2p.mde
  1     57,  0.001034
  2     74,  0.001042
  3     88,  0.001035
  4     90,  0.001040
  5    127,  0.001043
  6    127,  0.001047
  7    169,  0.001049
  8    172,  0.001048
  9    199,  0.001041
 10    311,  0.001042
```
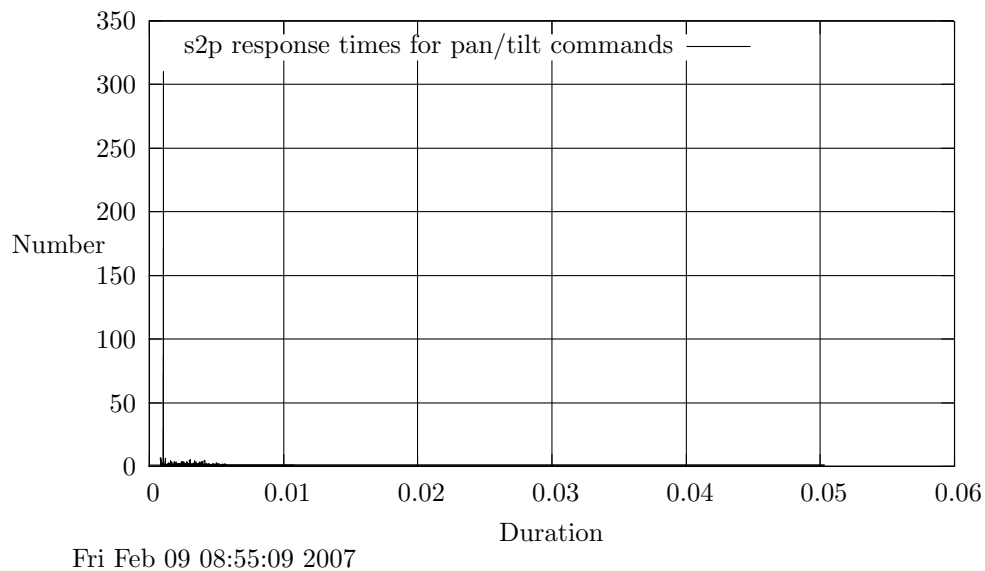
Figure 1: Durations of Responses from Run s2p

A.1.6   Test Run Data

```
1  Event 1 (1/18/2007 9:58:29.937400 AM) through
2  Event 40,302 (1/18/2007 10:07:08.545960 AM)


1  There were a total of    35824 DCE bytes transferred
2  The first DCE byte came in at 0.000000 seconds from the start of data collection
3  The last DCE byte was at 518.605457 seconds from the start of data collection
4
5  There were a total of     4478 DTE bytes transferred
6  The first DTE byte came in at 0.009717 seconds from the start of data collection
7  The last DTE byte was at 518.608560 seconds from the start of data collection
```
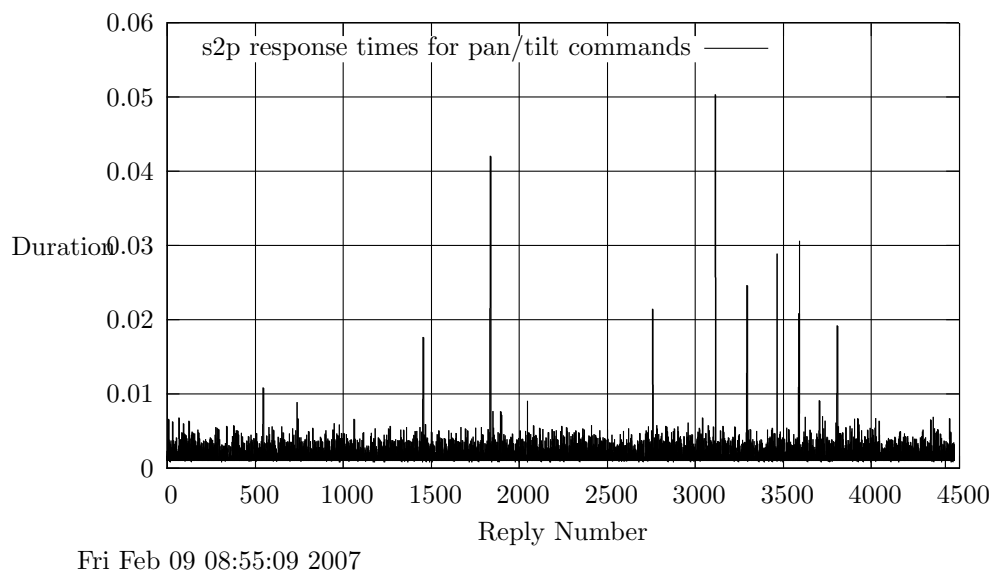
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Figure 2: Response Timings for Commands from Run `s2p`

A.2 Results for run `s3p`

A.2.1 Test Details

This is from testing with a Spectra III.

There were this many reply times that were analyzed:
```
1       4506 lines in S3P.TIM
```

A.2.2 Typical response times

The full set of response times are plotted in Figure 4, page 9.
```
    s3p.typ
 1      1,   0.001216
 2      2,   0.001504
 3      3,   0.001042
 4      4,   0.002281
 5      5,   0.001041
 6      6,   0.001389
 7      7,   0.001035
 8      8,   0.001799
 9      9,   0.001043
10     10,   0.001241
11     11,   0.000881
12     12,   0.001606
13     13,   0.001043
14     14,   0.001917
15     15,   0.001053
16     16,   0.001631
17     17,   0.001045
18     18,   0.001234
19     19,   0.001041
20     20,   0.001369
21     21,   0.001048
22     22,   0.001721
23     23,   0.001049
24     24,   0.001427
25     25,   0.001049
```

A.2.3 The minimum response times

All response times are plotted in Figure 3, page 8 by number
of identical responses and their duration.
```
    s3p.min
 1   1585,   0.000768
 2   2626,   0.000821
 3    874,   0.000865
 4    277,   0.000868
 5   1644,   0.000868
 6   3252,   0.000868
 7    229,   0.000869
 8    984,   0.000869
 9   4179,   0.000870
10    559,   0.000872
```

A.2.4 The maximum response times

All response times are plotted in Figure 3, page 8 by number
of identical responses and their duration.
```
    s3p.max
 1   2297,   0.038611
 2   3978,   0.041506
 3   1168,   0.044948
 4    199,   0.045172
 5   2303,   0.046408
 6   2829,   0.048227
 7    624,   0.051638
 8   2389,   0.055745
 9   3943,   0.060220
10   3117,   0.078795
```

A.2.5 The most common response times

All response times are plotted in Figure 3, page 8 by number
of identical responses and their duration.
```
    s3p.mde
 1     62,   0.001036
 2     71,   0.001034
 3    102,   0.001040
 4    133,   0.001035
 5    142,   0.001047
 6    161,   0.001043
 7    178,   0.001048
 8    206,   0.001049
 9    236,   0.001041
10    373,   0.001042
```
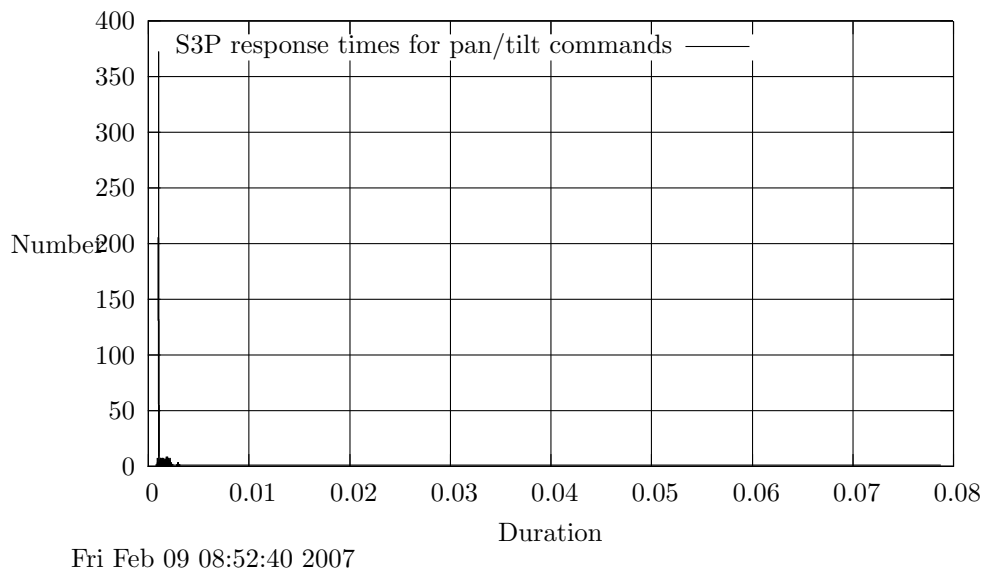
Fri Feb 09 08:52:40 2007

Figure 3: Durations of Responses from Run `s3p`

A.2.6   Test Run Data

```
1  Event 1 (1/18/2007 9:38:57.019964 AM) through
2  Event 40,320 (1/18/2007 9:47:22.521172 AM)


1  There were a total of    35840 DCE bytes transferred
2  The first DCE byte came in at 0.000000 seconds from the start of data collection
3  The last DCE byte was at 505.499143 seconds from the start of data collection
4
5  There were a total of     4480 DTE bytes transferred
6  The first DTE byte came in at 0.008812 seconds from the start of data collection
7  The last DTE byte was at 505.501208 seconds from the start of data collection
```
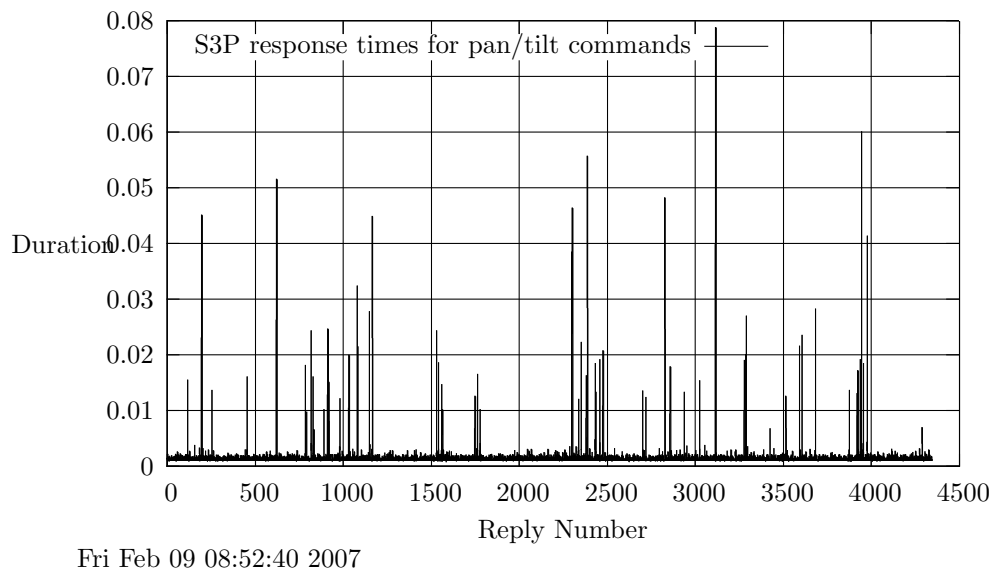
Figure 4: Response Timings for Commands from Run `s3p`

A.3   Results for run s4p

A.3.1   Test Details

This is from testing with a Spectra IV.

There were this many reply times that were analyzed:

```
1        4461 lines in S4P.TIM
```

A.3.2   Typical response times

The full set of response times are plotted in Figure 6, page 12.

```
    s4p.typ
 1       1,   0.001050
 2       2,   0.001374
 3       3,   0.001042
 4       4,   0.001459
 5       5,   0.001042
 6       6,   0.001446
 7       7,   0.001048
 8       8,   0.001407
 9       9,   0.001048
10      10,   0.001349
11      11,   0.001050
12      12,   0.001459
13      13,   0.001035
14      14,   0.001333
15      15,   0.001174
16      16,   0.001438
17      17,   0.001022
18      18,   0.001386
19      19,   0.001035
20      20,   0.001439
21      21,   0.001048
22      22,   0.001387
23      23,   0.001041
24      24,   0.001405
25      25,   0.001052
```

A.3.3   The minimum response times

All response times are plotted in Figure 5, page 11 by number of identical responses and their duration.

```
    s4p.min
 1      855,   0.000865
 2     1925,   0.000866
 3     2829,   0.000866
 4     4409,   0.000867
 5     2053,   0.000868
 6     2153,   0.000868
 7     3479,   0.000868
 8     3983,   0.000868
 9      253,   0.000870
10     3929,   0.000873
```

A.3.4   The maximum response times

All response times are plotted in Figure 5, page 11 by number of identical responses and their duration.

```
    s4p.max
 1     3770,   0.003581
 2     1986,   0.003589
 3      856,   0.003601
 4      646,   0.003637
 5     3810,   0.003652
 6     2370,   0.003705
 7     2282,   0.003844
 8     1002,   0.004663
 9     1530,   0.005353
10     4232,   0.006094
```

A.3.5   The most common response times

All response times are plotted in Figure 5, page 11 by number of identical responses and their duration.

```
    s4p.mde
 1       65,   0.001050
 2       84,   0.001034
 3      109,   0.001040
 4      128,   0.001035
 5      131,   0.001047
 6      156,   0.001043
 7      183,   0.001048
 8      190,   0.001049
 9      249,   0.001041
10      373,   0.001042
```
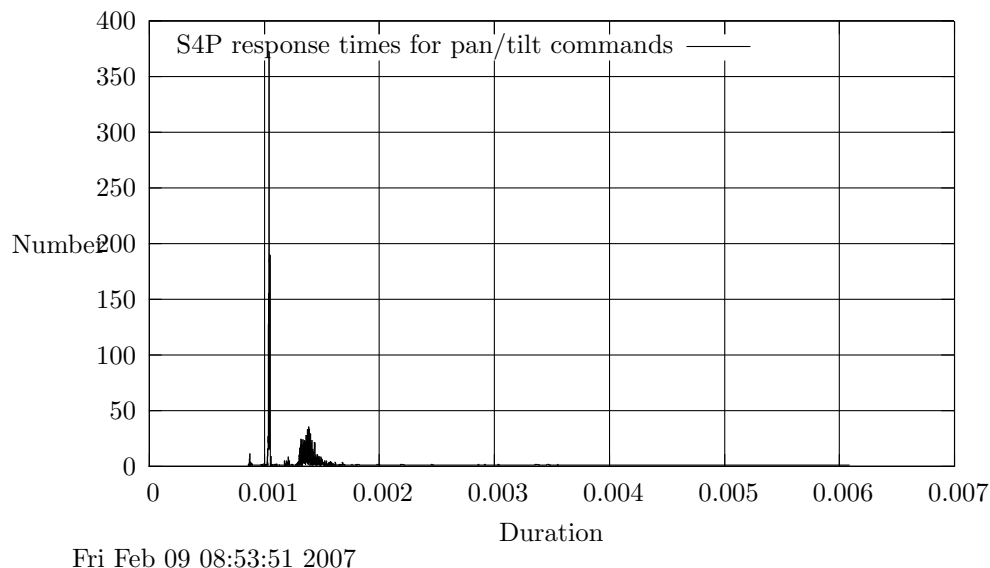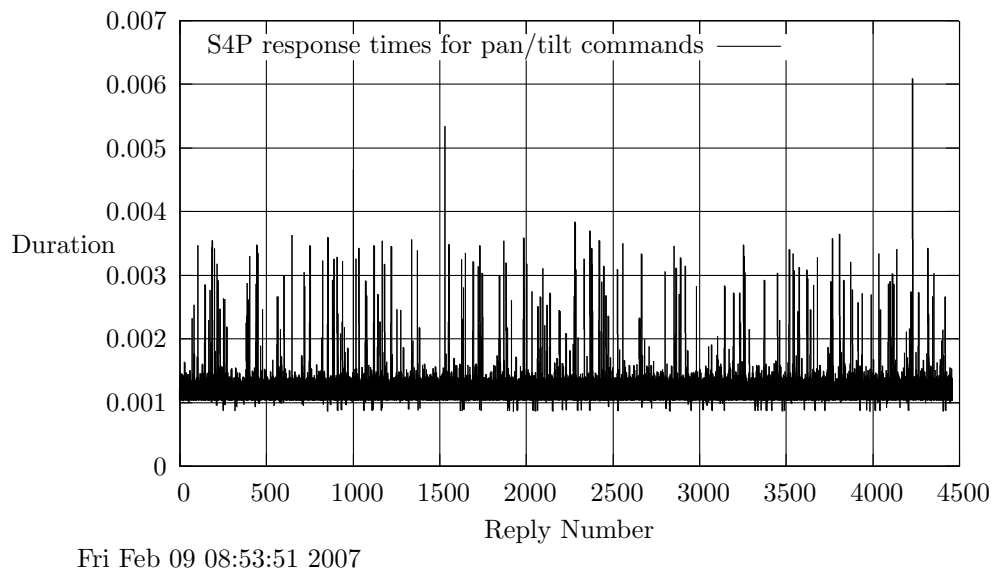
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Figure 5: Durations of Responses from Run `s4p`

A.3.6   Test Run Data

```
1  Event 1 (1/18/2007 8:38:03.831818 AM) through
2  Event 40,173 (1/18/2007 8:46:38.159448 AM)


1  There were a total of    35712 DCE bytes transferred
2  The first DCE byte came in at 0.000000 seconds from the start of data collection
3  The last DCE byte was at 514.326145 seconds from the start of data collection
4
5  There were a total of     4461 DTE bytes transferred
6  The first DTE byte came in at 0.008621 seconds from the start of data collection
7  The last DTE byte was at 514.327630 seconds from the start of data collection
```

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Figure 6: Response Timings for Commands from Run `s4p`

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