SecuriTEST PRO with

P Protocol with a Spectra IV

29 July 2009

Eric Hamilton

Contents

[1] `$Header: d:/Binder7/SecuriTEST/RCS/ST2.tex,v 1.3 2009-07-29 09:23:09-07 Hamilton Exp Hamilton $`
[4] `tocdepth = 4`

List of Figures

1 The SecuriTEST PRO

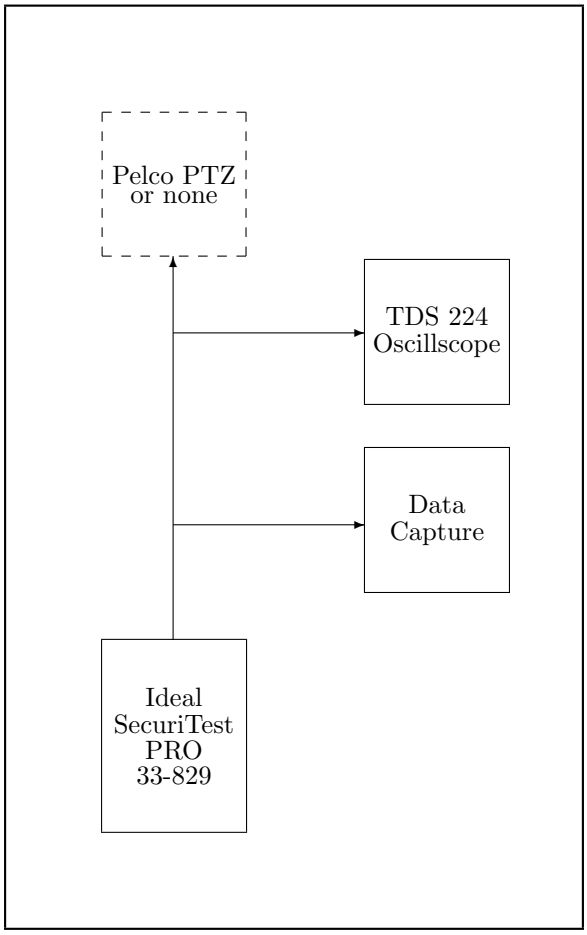
The unit used for testing was borrowed for the test. At one point it "locked up" and had to be returned to the manfacturer to "unlock". When it was returned the front of it was scanned in and the following Revision numbers were copied out:

1. `Product Ver 1.0`
2. `Firmware Ver 2.01`
3. Serial Number `00471` (`02614` after 09JUL01)

SecuriTe 05/08/2009 07:37 AM

Figure 1: Ideal SecuriTEST PRO 33-892

[5] `$Header: d:/Binder7/SecuriTEST/RCS/part0.inc,v 1.3 2009-07-28 14:24:38-07 Hamilton Exp Hamilton $`



$RCSfile: STP.inc,v $

Figure 2: Testing configuration

1.1 How to read the data captures

The data captures shown here have been collected from our Front Line System data capture system. It is a passive system that records, times and translates binary data into ASCII hex characters. After the data capture has been saved, it is then processed by `MSQ` to reformat the data into a more useful format. (In the data captures for the SecuriTEST PRO, no delta times were calculated nor was a version for printing produced.)

This data capture comes from communications between a Hitachi camera and the Spectra IV.

1.1.1 Before the delta times have been calculated:

```
  Msg#     Byte# Source   Tot byt Time        Since    Cmnd
  1707,    3989:  DTE     8027    240.003841  0.001140 :RFCC700
  1710,    3997:  DTE     8044    240.129810  0.001144 :RFCC700
  1713,    4005:  DTE     8061    240.263163  0.001314 :RFCC700
```

1.1.2 After the delta times have been calculated:

```
  Msg#     Byte# Source   Tot byt Time         Delta     Since    Cmnd
  1707,    4037: DCE      8025    240.001948   0.129435  0.108556 :RFCC700
  1707,    3989:  DTE     8027    240.003841   0.001893  0.001140 :RFCC700

  1710,    4045: DCE      8041    240.126926   0.123085  0.104219 :RFCC700
  1710,    3997:  DTE     8044    240.129810   0.002884  0.001144 :RFCC700

  1713,    4053: DCE      8057    240.259719   0.129909  0.109850 :RFCC700
  1713,    4005:  DTE     8061    240.263163   0.003444  0.001314 :RFCC700
```

1.1.3 Fully processed data:

```
  Msg#     Byte# Source   Tot byt Time         Delta     Since    Cmnd
  1707,    4037: DCE      8025    240.001948   0.129435 0.108556 :R FCC7 00
  1707,    3989:  DTE     8027    240.003841   0.001893 0.001140 :R FCC7 00

  1710,    4045: DCE      8041    240.126926   0.123085 0.104219 :R FCC7 00
  1710,    3997:  DTE     8044    240.129810   0.002884 0.001144 :R FCC7 00

  1713,    4053: DCE      8057    240.259719   0.129909 0.109850 :R FCC7 00
  1713,    4005:  DTE     8061    240.263163   0.003444 0.001314 :R FCC7 00
```

1.1.4 Data for printing:

```
Source Time         Delta     Since    Cmnd
DCE    240.001948   0.129435 0.108556 :R FCC7 00
 DTE   240.003841   0.001893 0.001140 :R FCC7 00

DCE    240.126926   0.123085 0.104219 :R FCC7 00
 DTE   240.129810   0.002884 0.001144 :R FCC7 00
```

[6] `$Header: d:/Binder7/SecuriTEST/RCS/DataCap.inc,v 1.1 2009-07-28 14:25:28-07 Hamilton Exp Hamilton $`

```
DCE    240.259719   0.129909 0.109850 :R FCC7 00
 DTE   240.263163   0.003444 0.001314 :R FCC7 00
```

1.1.5 Legend:

```
Msg#    = Message pair, increments on each change of Source ID.
Byte#   = Incrementing byte count within that Source ID.
Source  = Where it came from.
Tot byt = Total byte number from the start of the data capture.
Time    = When it came based on the first byte coming in at time zero.
Delta   = Duration when this came in from the last data in the other Source ID.
        = Msg# 1710 Source ID DCE: 240.126926 - 240.003841 = 0.123085.
        = Msg# 1710 Source ID DTE: 240.129810 - 240.126929 = 0.002884.
Since   = Time since the preceding byte byte came in for this Source ID.
Cmnd    = The command, or reply, exactly as sent to the Hitachi or
          received from the Hitachi.
```

`DCE` and `DTE` sources may be reversed on a data capture by data capture basis.

2 Tests with a SecuriTEST PRO and the Spectra IV

A test was made with an Ideal SecuritTEST PRO hand held test unit. The results are that with a Spectra IV, using rev 1.08 of the Spectra IV software, the SecuriTEST PRO was never able to control the unit when using P Protocol at address 1. Control was possiable at P Address 2.

The SecuriTEST PRO generates bizzare camera control protocol strings. These strings have the following problems in P Protocol.

1. The first byte transmitted is `0x00`
2. The next eight bytes are correct P Protocol data.
3. Then a single byte of `0x00` is transmitted.
4. At 2400 baud then about 10 ms after the `0x00` byte, a byte of `0x17` is usually transmitted.
5. If the command is to be repeated, then the sequence is repeated.

2.1 P Address 1

In data capture **09JUL28A** (Section 2.4.1, page 8 for the processed version and Section 2.5.1, page 12 for the original version), it should be noted that the Spectra IV generates a `NULL` (`0x00`) before receiving the full command in. The SecuriTEST PRO, generates the expected extra `0x00`s before and after the otherwise normal P Protocol command for Open Iris. Then the SecurTEST PRO generates an unexpected `0xFF` followed by a normal[8] Stop command which the Spectra IV acknowledges, at which point the SecureTEST PRO sends a `0x00` and finally a `0x17`.

In data capture **09JUL28B** (Section 2.4.2, page 9 and Section 2.5.2, page 13) note that the Spectra IV keeps on sending `0x00`s in the middle of each command and that the SecuriTEST PRO does not finush the last command.

2.2 P Address 2

In data capture **09JUL28C** (Section 2.4.3, page 10 and Section 2.5.3, page 15) note that the Spectra IV sends an Acknowledgment before the SecuriTEST PRO gets a chance to send its ending `0x00`, and then its `0x17`. It does this for both the Iris Open command and the associated stop command.

In data capture **09JUL28D** (Section 2.4.4, page 11 and Section 2.5.4, page 16) note that the Spectra IV sends Acknowledgments before the SecuriTEST PRO can send its wierd `0x00` and `0x17`s. Otherwise all is almost OK.

2.3 Analysis results

The overall result is that the SecuriTEST PRO appears to work correctly with Spectra IV P Protocol address 2 and not with address 1. The Spectra IV does work correctly, using the GlassKeyboard, when P Protocol commands are sent to either addresses 1 or 2. Thus there is probably an unexpected problem with processing P Protocol commands when using P Protocol address 1 **if** there is any "noise" on the communications line.

It sould be noted that neither a Spectra III nor a Spectra IV running rev 1.07 software has any problems with either P Protocol address.

[7] `$Header: d:/Binder7/SecuriTEST/RCS/SpectraP.inc,v 1.3 2009-07-29 09:23:09-07 Hamilton Exp Hamilton $`

[8] Well it is normal for a SecuriTEST PRO!

2.4 First processing of the captured data

The following files have been processed to show the data in a resonable manner.

2.4.1 09JUL28A.cln

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28a.cln,v 1.1 2009-07-28 11:52:19-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 1, Rev 1.08, 2400 baud
 4  # Open Iris
 5  #
 6  # FTS capture buffer (7/28/2009 11:25:44 AM)
 7  # Event 1 (7/28/2009 11:24:13.889343 AM) through
 8  # Event 24 (7/28/2009 11:24:14.113219 AM)
 9
10       1,        1:  DTE     1     0.000000   0.000000 00 a0 00 04 00 00 00
11
12       2,        1: DCE      8     0.029133   0.004162 00
13
14       2,        8:  DTE     9     0.029141   0.004162 af 0b 00
15
16       2,       11:  DTE    12     0.047209   0.009739 ff
17
18       2,       12:  DTE    13     0.171588   0.124379 00 a0 00 00 00 00 00 af 0f
19
20       3,        2: DCE     22     0.209083   0.004166 a2
21
22       3,       21:  DTE    23     0.209091   0.004166 00
23
24       3,       22:  DTE    24     0.223876   0.014785 17
25
26  # There were a total of      24 bytes transferred
27
28  # There were a total of       2 DCE bytes transferred
29  # The first DCE byte came in at 0.029133 seconds from the start of data collection
30  # The last DCE byte was at 0.209083 seconds from the start of data collection
31
32  # There were a total of      22 DTE bytes transferred
33  # The first DTE byte came in at 0.000000 seconds from the start of data collection
34  # The last DTE byte was at 0.223876 seconds from the start of data collection
35
```

2.4.2 09JUL28B.cln

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28b.cln,v 1.1 2009-07-28 11:52:17-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 1, Rev 1.08, 2400 baud
 4  # Right
 5  #
 6  # FTS capture buffer (7/28/2009 11:27:06 AM)
 7  # Event 1 (7/28/2009 11:26:39.764243 AM) through
 8  # Event 45 (7/28/2009 11:26:40.387442 AM)
 9
10       1,         1:  DTE     1     0.000000   0.000000 00 a0 00 00 02 3b 00 af 36 00
11
12       1,        11:  DTE    11     0.109113   0.071644 00
13
14       1,        12:  DTE    12     0.113277   0.004164 a0 00 00 00
15
16       2,         1: DCE     16     0.129925   0.004148 00
17
18       2,        16:  DTE    17     0.129934   0.004148 00 00 af 0f 00
19
20       2,        21:  DTE    22     0.343256   0.196646 00
21
22       2,        22:  DTE    23     0.347417   0.004161 a0 00 00 00
23
24       3,         2: DCE     27     0.364067   0.004149 00
25
26       3,        26:  DTE    28     0.364076   0.004149 00 00 af 0f 00
27
28       3,        31:  DTE    33     0.577395   0.196662 00 a0 00 00 00
29
30       4,         3: DCE     38     0.598195   0.004162 00
31
32       4,        36:  DTE    39     0.598204   0.004162 00 00 af 0f 00 00 f8
33
34  # There were a total of      45 bytes transferred
35
36  # There were a total of       3 DCE bytes transferred
37  # The first DCE byte came in at 0.129925 seconds from the start of data collection
38  # The last DCE byte was at 0.598195 seconds from the start of data collection
39
40  # There were a total of      42 DTE bytes transferred
41  # The first DTE byte came in at 0.000000 seconds from the start of data collection
42  # The last DTE byte was at 0.623199 seconds from the start of data collection
```

2.4.3 09JUL28C.cln

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28c.cln,v 1.1 2009-07-28 11:52:14-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 2, Rev 1.08, 2400 baud
 4  # Open Iris
 5  #
 6  # FTS capture buffer (7/28/2009 11:29:00 AM)
 7  # Event 1 (7/28/2009 11:28:31.925822 AM) through
 8  # Event 24 (7/28/2009 11:28:32.229091 AM)
 9
10       1,         1:  DTE     1     0.000000   0.000000 00 a0 01 04 00 00 00 af 0a
11
12       2,         1: DCE     10     0.037484   0.004163 a2
13
14       2,        10:  DTE    11     0.037493   0.004163 00
15
16       2,        11:  DTE    12     0.052304   0.014811 17
17
18       2,        12:  DTE    13     0.251006   0.198702 00 a0 01 00 00 00 00 af 0e
19
20       3,         2: DCE     22     0.288357   0.004046 a2
21
22       3,        21:  DTE    23     0.288365   0.004046 00
23
24       3,        22:  DTE    24     0.303269   0.014904 17
25
26  # There were a total of      24 bytes transferred
27
28  # There were a total of       2 DCE bytes transferred
29  # The first DCE byte came in at 0.037484 seconds from the start of data collection
30  # The last DCE byte was at 0.288357 seconds from the start of data collection
31
32  # There were a total of      22 DTE bytes transferred
33  # The first DTE byte came in at 0.000000 seconds from the start of data collection
34  # The last DTE byte was at 0.303269 seconds from the start of data collection
```

2.4.4 09JUL28D.cln

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28d.cln,v 1.1 2009-07-28 11:52:08-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 1, Rev 1.08, 2400 baud
 4  # Right
 5  #
 6  # FTS capture buffer (7/28/2009 11:29:41 AM)
 7  # Event 1 (7/28/2009 11:29:16.614084 AM) through
 8  # Event 71 (7/28/2009 11:29:17.436659 AM)
 9
10       1,        1:  DTE     1     0.000000   0.000000 00 a0 01 00 02 3b 00 af 37
11
12       2,        1: DCE     10     0.037496   0.004165 a2
13
14       2,       10:  DTE    11     0.037504   0.004165 00
15
16       2,       11:  DTE    12     0.052288   0.014784 17
17
18       2,       12:  DTE    13     0.099192   0.046904 00 a0 01 00 02 3b 00 af 37 00
19
20       3,        2: DCE     23     0.136586   0.000088 a2
21
22       3,       22:  DTE    24     0.151510   0.000088 17
23
24       3,       23:  DTE    25     0.198438   0.046928 00 a0 01 00 02 3b 00 af 37
25
26       4,        3: DCE     34     0.235906   0.004163 a2
27
28       4,       32:  DTE    35     0.235915   0.004163 00
29
30       4,       33:  DTE    36     0.250752   0.014837 17
31
32       4,       34:  DTE    37     0.308542   0.057790 00 a0 01 00 00 00 00 af 0e
33
34       5,        4: DCE     46     0.345921   0.004048 a2
35
36       5,       43:  DTE    47     0.345929   0.004048 00
37
38       5,       44:  DTE    48     0.542632   0.196703 00 a0 01 00 00 00 00 af 0e
39
40       6,        5: DCE     57     0.580062   0.004129 a2
41
42       6,       53:  DTE    58     0.580070   0.004129 00
43
44       6,       54:  DTE    59     0.776747   0.196677 00 a0 01 00 00 00 00 af 0e
45
46       7,        6: DCE     68     0.814202   0.004126 a2
47
48       7,       63:  DTE    69     0.814210   0.004126 00 17 ff
49
50  # There were a total of      71 bytes transferred
51
52  # There were a total of       6 DCE bytes transferred
53  # The first DCE byte came in at 0.037496 seconds from the start of data collection
54  # The last DCE byte was at 0.814202 seconds from the start of data collection
55
56  # There were a total of      65 DTE bytes transferred
57  # The first DTE byte came in at 0.000000 seconds from the start of data collection
58  # The last DTE byte was at 0.822575 seconds from the start of data collection
```

2.5 Original capture data

2.5.1 09JUL28A.out

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28a.out,v 1.1 2009-07-28 11:51:54-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 1, Rev 1.08, 2400 baud
 4  # Open Iris
 5  #
 6  # FTS capture buffer (7/28/2009 11:25:44 AM)
 7  # Event 1 (7/28/2009 11:24:13.889343 AM) through
 8  # Event 24 (7/28/2009 11:24:14.113219 AM)
 9
10       1,        1:  DTE     1     0.000000   0.000000 00
11       1,        2:  DTE     2     0.004162   0.004162 a0
12       1,        3:  DTE     3     0.008331   0.004169 00
13       1,        4:  DTE     4     0.012495   0.004164 04
14       1,        5:  DTE     5     0.016496   0.004001 00
15       1,        6:  DTE     6     0.020830   0.004334 00
16       1,        7:  DTE     7     0.024971   0.004141 00
17
18       2,        1: DCE      8     0.029133   0.004162 00
19
20       2,        8:  DTE     9     0.029141   0.004162 af
21       2,        9:  DTE    10     0.033303   0.004162 0b
22       2,       10:  DTE    11     0.037470   0.004167 00
23       2,       11:  DTE    12     0.047209   0.009739 ff
24       2,       12:  DTE    13     0.171588   0.124379 00
25       2,       13:  DTE    14     0.175729   0.004141 a0
26       2,       14:  DTE    15     0.179917   0.004188 00
27       2,       15:  DTE    16     0.184084   0.004167 00
28       2,       16:  DTE    17     0.188250   0.004166 00
29       2,       17:  DTE    18     0.192419   0.004169 00
30       2,       18:  DTE    19     0.196583   0.004164 00
31       2,       19:  DTE    20     0.200751   0.004168 af
32       2,       20:  DTE    21     0.204917   0.004166 0f
33
34       3,        2: DCE     22     0.209083   0.004166 a2
35
36       3,       21:  DTE    23     0.209091   0.004166 00
37       3,       22:  DTE    24     0.223876   0.014785 17
38
39  # There were a total of      24 bytes transferred
40
41  # There were a total of       2 DCE bytes transferred
42  # The first DCE byte came in at 0.029133 seconds from the start of data collection
43  # The last DCE byte was at 0.209083 seconds from the start of data collection
44
45  # There were a total of      22 DTE bytes transferred
46  # The first DTE byte came in at 0.000000 seconds from the start of data collection
47  # The last DTE byte was at 0.223876 seconds from the start of data collection
```

2.5.2 09JUL28B.out

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28b.out,v 1.1 2009-07-28 11:51:58-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 1, Rev 1.08, 2400 baud
 4  # Right
 5  #
 6  # FTS capture buffer (7/28/2009 11:27:06 AM)
 7  # Event 1 (7/28/2009 11:26:39.764243 AM) through
 8  # Event 45 (7/28/2009 11:26:40.387442 AM)
 9
10       1,        1:  DTE     1     0.000000   0.000000 00
11       1,        2:  DTE     2     0.004161   0.004161 a0
12       1,        3:  DTE     3     0.008329   0.004168 00
13       1,        4:  DTE     4     0.012497   0.004168 00
14       1,        5:  DTE     5     0.016635   0.004138 02
15       1,        6:  DTE     6     0.020803   0.004168 3b
16       1,        7:  DTE     7     0.024968   0.004165 00
17       1,        8:  DTE     8     0.029135   0.004167 af
18       1,        9:  DTE     9     0.033302   0.004167 36
19       1,       10:  DTE    10     0.037469   0.004167 00
20       1,       11:  DTE    11     0.109113   0.071644 00
21       1,       12:  DTE    12     0.113277   0.004164 a0
22       1,       13:  DTE    13     0.117442   0.004165 00
23       1,       14:  DTE    14     0.121610   0.004168 00
24       1,       15:  DTE    15     0.125777   0.004167 00
25
26       2,        1: DCE     16     0.129925   0.004148 00
27
28       2,       16:  DTE    17     0.129934   0.004148 00
29       2,       17:  DTE    18     0.134110   0.004176 00
30       2,       18:  DTE    19     0.138276   0.004166 af
31       2,       19:  DTE    20     0.142444   0.004168 0f
32       2,       20:  DTE    21     0.146610   0.004166 00
33       2,       21:  DTE    22     0.343256   0.196646 00
34       2,       22:  DTE    23     0.347417   0.004161 a0
35       2,       23:  DTE    24     0.351584   0.004167 00
36       2,       24:  DTE    25     0.355583   0.003999 00
37       2,       25:  DTE    26     0.359918   0.004335 00
38
39       3,        2: DCE     27     0.364067   0.004149 00
40
41       3,       26:  DTE    28     0.364076   0.004149 00
42       3,       27:  DTE    29     0.368251   0.004175 00
43       3,       28:  DTE    30     0.372224   0.003973 af
44       3,       29:  DTE    31     0.376558   0.004334 0f
45       3,       30:  DTE    32     0.380733   0.004175 00
46       3,       31:  DTE    33     0.577395   0.196662 00
47       3,       32:  DTE    34     0.581559   0.004164 a0
48       3,       33:  DTE    35     0.585724   0.004165 00
49       3,       34:  DTE    36     0.589866   0.004142 00
50       3,       35:  DTE    37     0.594033   0.004167 00
51
52       4,        3: DCE     38     0.598195   0.004162 00
53
54       4,       36:  DTE    39     0.598204   0.004162 00
55       4,       37:  DTE    40     0.602367   0.004163 00
56       4,       38:  DTE    41     0.606531   0.004164 af
57       4,       39:  DTE    42     0.610699   0.004168 0f
58       4,       40:  DTE    43     0.614866   0.004167 00
59       4,       41:  DTE    44     0.619031   0.004165 00
60       4,       42:  DTE    45     0.623199   0.004168 f8
61
62  # There were a total of      45 bytes transferred
63
64  # There were a total of       3 DCE bytes transferred
65  # The first DCE byte came in at 0.129925 seconds from the start of data collection
66  # The last DCE byte was at 0.598195 seconds from the start of data collection
67
68  # There were a total of      42 DTE bytes transferred
```

```
69  # The first DTE byte came in at 0.000000 seconds from the start of data collection
70  # The last DTE byte was at 0.623199 seconds from the start of data collection
```

2.5.3 09JUL28C.out

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28c.out,v 1.1 2009-07-28 11:52:01-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 1, Rev 1.08, 2400 baud
 4  # Open Iris
 5  #
 6  # FTS capture buffer (7/28/2009 11:29:00 AM)
 7  # Event 1 (7/28/2009 11:28:31.925822 AM) through
 8  # Event 24 (7/28/2009 11:28:32.229091 AM)
 9
10       1,        1:  DTE     1     0.000000   0.000000 00
11       1,        2:  DTE     2     0.004153   0.004153 a0
12       1,        3:  DTE     3     0.008320   0.004167 01
13       1,        4:  DTE     4     0.012488   0.004168 04
14       1,        5:  DTE     5     0.016653   0.004165 00
15       1,        6:  DTE     6     0.020819   0.004166 00
16       1,        7:  DTE     7     0.024987   0.004168 00
17       1,        8:  DTE     8     0.029154   0.004167 af
18       1,        9:  DTE     9     0.033321   0.004167 0a
19
20       2,        1: DCE     10     0.037484   0.004163 a2
21
22       2,       10:  DTE    11     0.037493   0.004163 00
23       2,       11:  DTE    12     0.052304   0.014811 17
24       2,       12:  DTE    13     0.251006   0.198702 00
25       2,       13:  DTE    14     0.255168   0.004162 a0
26       2,       14:  DTE    15     0.259337   0.004169 01
27       2,       15:  DTE    16     0.263476   0.004139 00
28       2,       16:  DTE    17     0.267644   0.004168 00
29       2,       17:  DTE    18     0.271811   0.004167 00
30       2,       18:  DTE    19     0.275976   0.004165 00
31       2,       19:  DTE    20     0.280144   0.004168 af
32       2,       20:  DTE    21     0.284311   0.004167 0e
33
34       3,        2: DCE     22     0.288357   0.004046 a2
35
36       3,       21:  DTE    23     0.288365   0.004046 00
37       3,       22:  DTE    24     0.303269   0.014904 17
38
39  # There were a total of      24 bytes transferred
40
41  # There were a total of       2 DCE bytes transferred
42  # The first DCE byte came in at 0.037484 seconds from the start of data collection
43  # The last DCE byte was at 0.288357 seconds from the start of data collection
44
45  # There were a total of      22 DTE bytes transferred
46  # The first DTE byte came in at 0.000000 seconds from the start of data collection
47  # The last DTE byte was at 0.303269 seconds from the start of data collection
```

2.5.4 09JUL28D.out

```
 1  # $Header: d:/Binder7/SecuriTEST/RCS/09jul28d.out,v 1.1 2009-07-28 11:52:03-07 Hamilton Exp Hamilton $
 2  # DCE = SecuriTEST PRO
 3  # DTE = Spectra IV, Address 1, Rev 1.08, 2400 baud
 4  # Right
 5  #
 6  # FTS capture buffer (7/28/2009 11:29:41 AM)
 7  # Event 1 (7/28/2009 11:29:16.614084 AM) through
 8  # Event 71 (7/28/2009 11:29:17.436659 AM)
 9
10       1,        1:  DTE     1     0.000000   0.000000 00
11       1,        2:  DTE     2     0.004163   0.004163 a0
12       1,        3:  DTE     3     0.008331   0.004168 01
13       1,        4:  DTE     4     0.012498   0.004167 00
14       1,        5:  DTE     5     0.016665   0.004167 02
15       1,        6:  DTE     6     0.020831   0.004166 3b
16       1,        7:  DTE     7     0.024998   0.004167 00
17       1,        8:  DTE     8     0.029164   0.004166 af
18       1,        9:  DTE     9     0.033331   0.004167 37
19
20       2,        1: DCE     10     0.037496   0.004165 a2
21
22       2,       10:  DTE    11     0.037504   0.004165 00
23       2,       11:  DTE    12     0.052288   0.014784 17
24       2,       12:  DTE    13     0.099192   0.046904 00
25       2,       13:  DTE    14     0.103357   0.004165 a0
26       2,       14:  DTE    15     0.107524   0.004167 01
27       2,       15:  DTE    16     0.111689   0.004165 00
28       2,       16:  DTE    17     0.115856   0.004167 02
29       2,       17:  DTE    18     0.120024   0.004168 3b
30       2,       18:  DTE    19     0.124191   0.004167 00
31       2,       19:  DTE    20     0.128357   0.004166 af
32       2,       20:  DTE    21     0.132498   0.004141 37
33       2,       21:  DTE    22     0.136498   0.004000 00
34
35       3,        2: DCE     23     0.136586   0.000088 a2
36
37       3,       22:  DTE    24     0.151510   0.000088 17
38       3,       23:  DTE    25     0.198438   0.046928 00
39       3,       24:  DTE    26     0.202575   0.004137 a0
40       3,       25:  DTE    27     0.206576   0.004001 01
41       3,       26:  DTE    28     0.210909   0.004333 00
42       3,       27:  DTE    29     0.215076   0.004167 02
43       3,       28:  DTE    30     0.219243   0.004167 3b
44       3,       29:  DTE    31     0.223407   0.004164 00
45       3,       30:  DTE    32     0.227575   0.004168 af
46       3,       31:  DTE    33     0.231743   0.004168 37
47
48       4,        3: DCE     34     0.235906   0.004163 a2
49
50       4,       32:  DTE    35     0.235915   0.004163 00
51       4,       33:  DTE    36     0.250752   0.014837 17
52       4,       34:  DTE    37     0.308542   0.057790 00
53       4,       35:  DTE    38     0.312708   0.004166 a0
54       4,       36:  DTE    39     0.316705   0.003997 01
55       4,       37:  DTE    40     0.321039   0.004334 00
56       4,       38:  DTE    41     0.325205   0.004166 00
57       4,       39:  DTE    42     0.329373   0.004168 00
58       4,       40:  DTE    43     0.333540   0.004167 00
59       4,       41:  DTE    44     0.337706   0.004166 af
60       4,       42:  DTE    45     0.341873   0.004167 0e
61
62       5,        4: DCE     46     0.345921   0.004048 a2
63
64       5,       43:  DTE    47     0.345929   0.004048 00
65       5,       44:  DTE    48     0.542632   0.196703 00
66       5,       45:  DTE    49     0.546804   0.004172 a0
67       5,       46:  DTE    50     0.550961   0.004157 01
68       5,       47:  DTE    51     0.555127   0.004166 00
```

```
 69       5,       48:  DTE    52     0.559269   0.004142 00
 70       5,       49:  DTE    53     0.563434   0.004165 00
 71       5,       50:  DTE    54     0.567602   0.004168 00
 72       5,       51:  DTE    55     0.571768   0.004166 af
 73       5,       52:  DTE    56     0.575933   0.004165 0e
 74
 75       6,        5: DCE     57     0.580062   0.004129 a2
 76
 77       6,       53:  DTE    58     0.580070   0.004129 00
 78       6,       54:  DTE    59     0.776747   0.196677 00
 79       6,       55:  DTE    60     0.780909   0.004162 a0
 80       6,       56:  DTE    61     0.785075   0.004166 01
 81       6,       57:  DTE    62     0.789243   0.004168 00
 82       6,       58:  DTE    63     0.793409   0.004166 00
 83       6,       59:  DTE    64     0.797576   0.004167 00
 84       6,       60:  DTE    65     0.801742   0.004166 00
 85       6,       61:  DTE    66     0.805909   0.004167 af
 86       6,       62:  DTE    67     0.810076   0.004167 0e
 87
 88       7,        6: DCE     68     0.814202   0.004126 a2
 89
 90       7,       63:  DTE    69     0.814210   0.004126 00
 91       7,       64:  DTE    70     0.818409   0.004199 17
 92       7,       65:  DTE    71     0.822575   0.004166 ff
 93
 94  # There were a total of      71 bytes transferred
 95
 96  # There were a total of       6 DCE bytes transferred
 97  # The first DCE byte came in at 0.037496 seconds from the start of data collection
 98  # The last DCE byte was at 0.814202 seconds from the start of data collection
 99
100  # There were a total of      65 DTE bytes transferred
101  # The first DTE byte came in at 0.000000 seconds from the start of data collection
102  # The last DTE byte was at 0.822575 seconds from the start of data collection
```

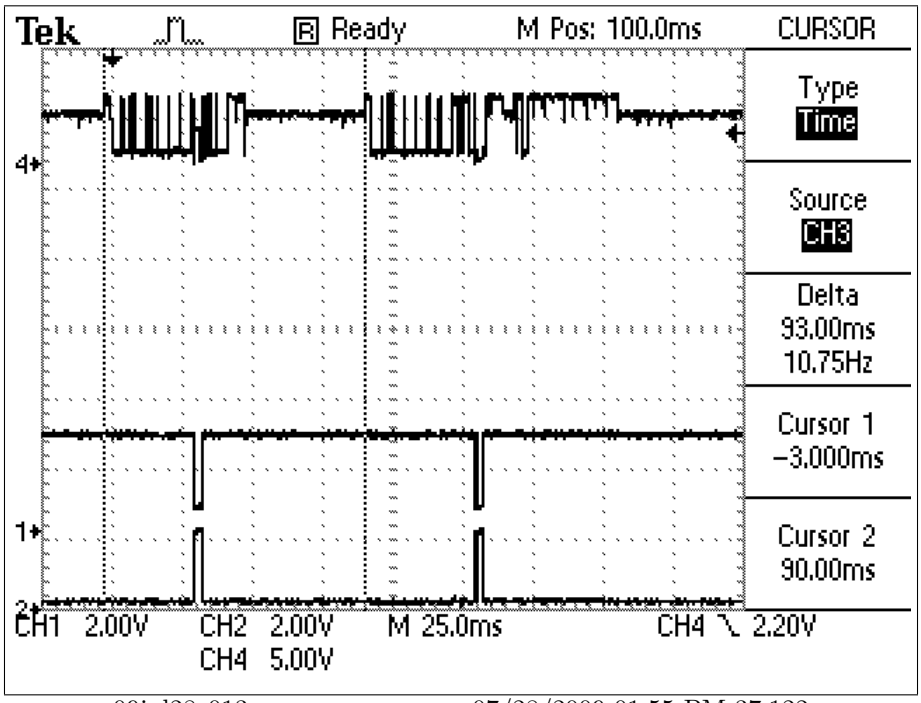


Figure 3: P Protocol, Address 1, Spectra IV, Time from Command 1 to Command 2

3 Pictures of the SecuriTEST PRO and the Spectra IV in P Protocol

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

[9] $Heaader$

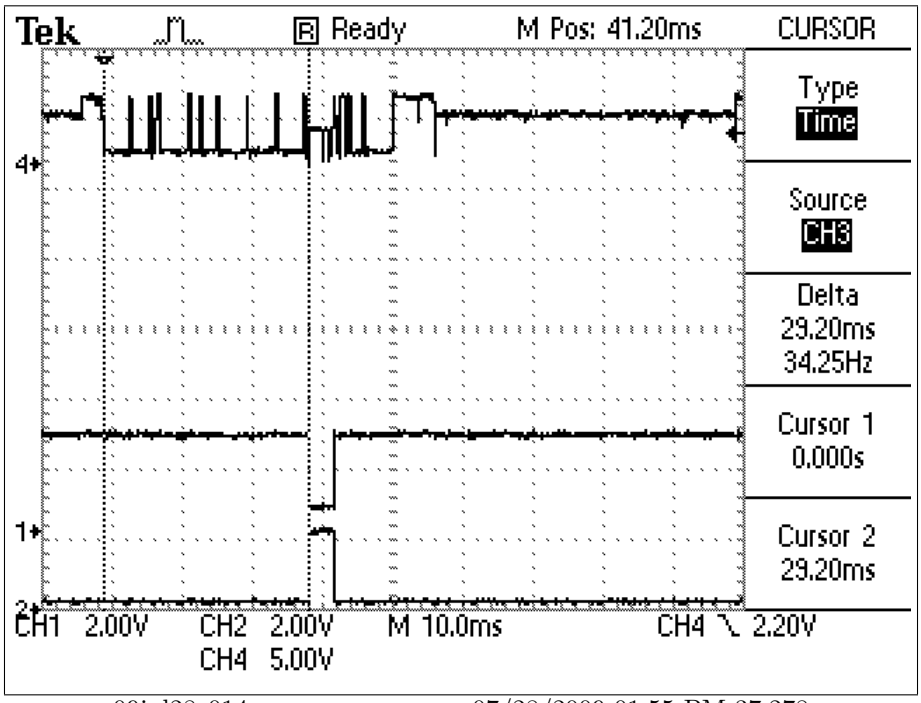


Figure 4: P Protocol, Address 1, Spectra IV, Command 1 Time from command to `0x00` byte

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

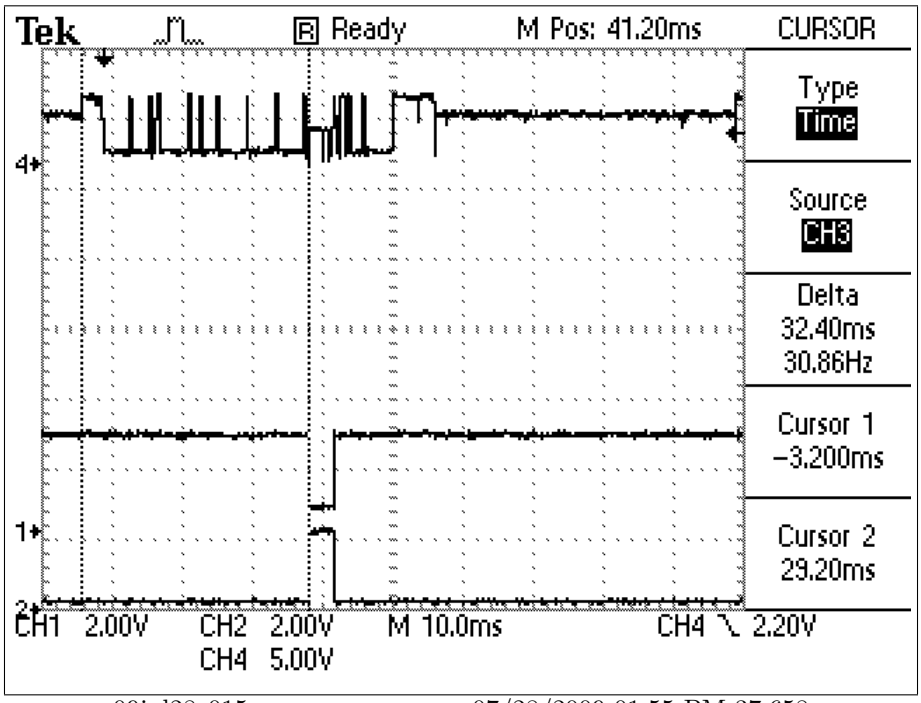


Figure 5: P Protocol, Address 1, Spectra IV, Command 1 Time fro line seasure to `0x00` byte

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

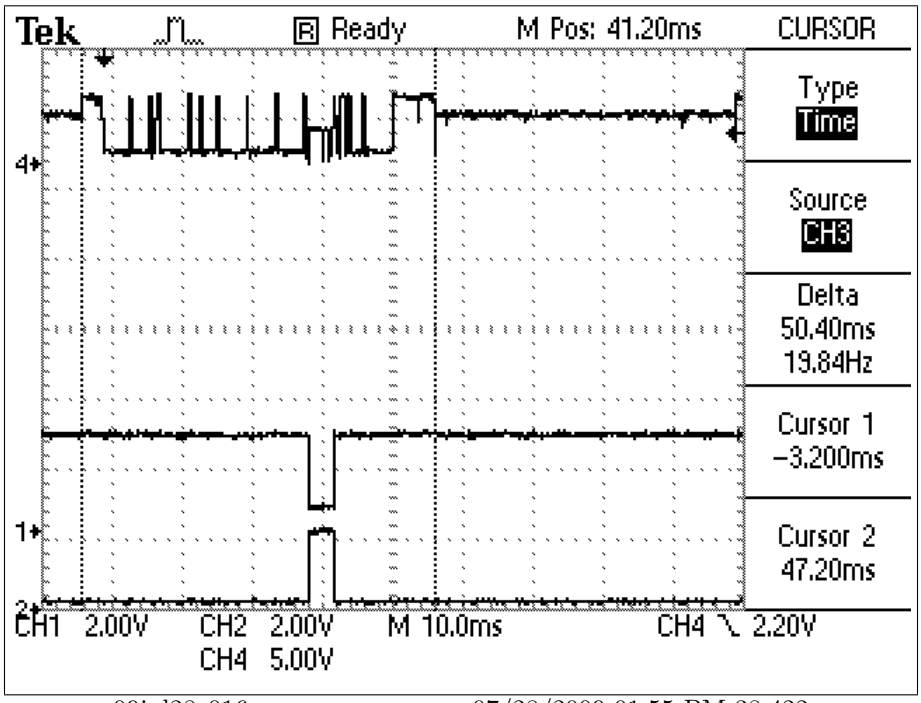


Figure 6: P Protocol, Address 1, Spectra IV, Command 2 line seasure to end of line seasure

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

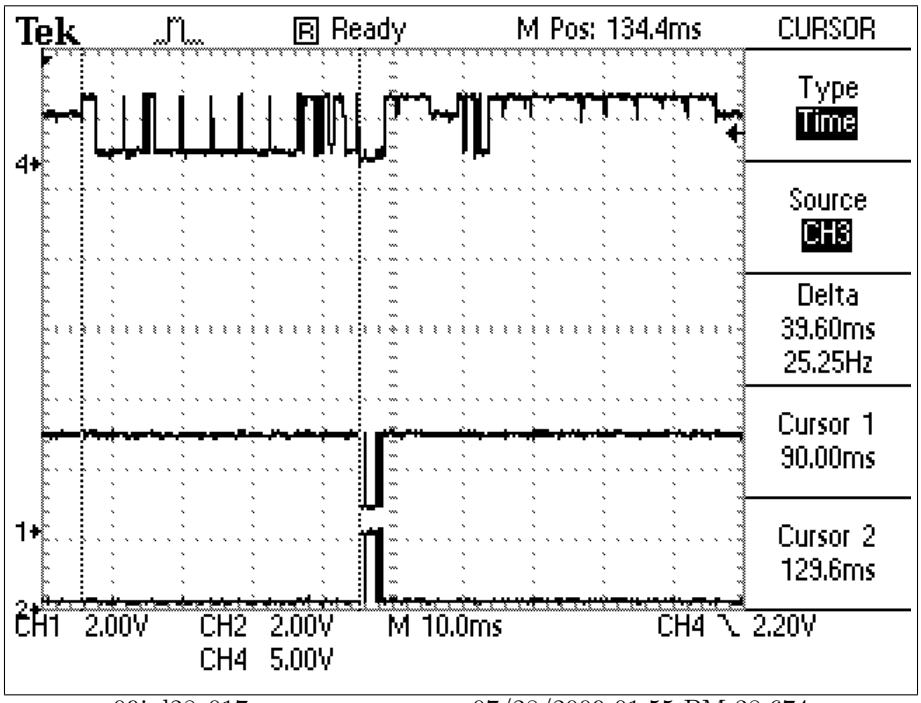


Figure 7: P Protocol, Address 1, Spectra IV, Command 2 to end of wierd byte

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

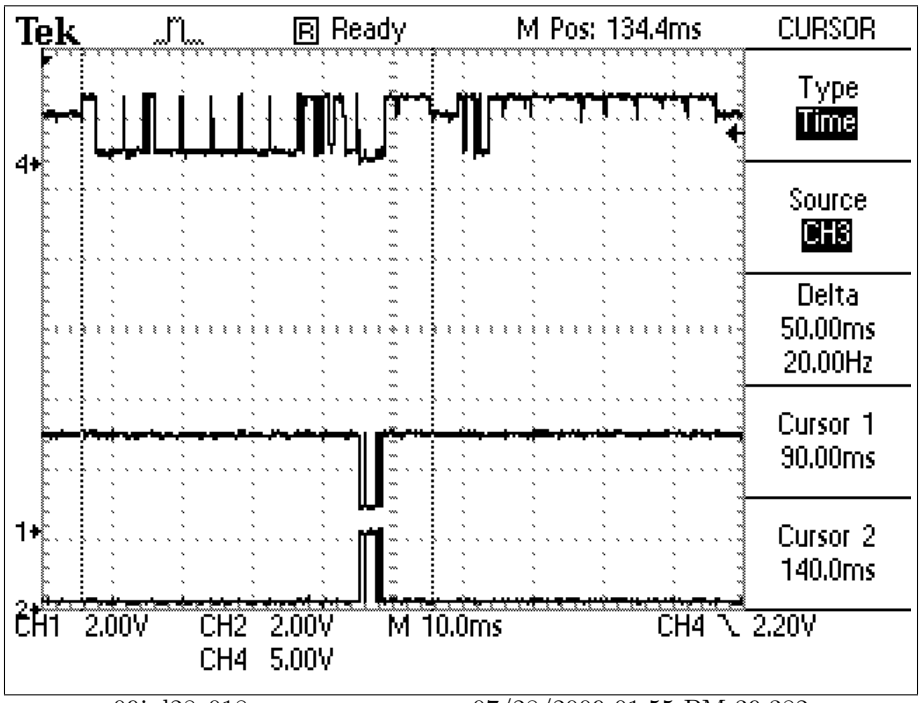


Figure 8: P Protocol, Address 1, Spectra IV, Command 2 to end of first line seasure

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

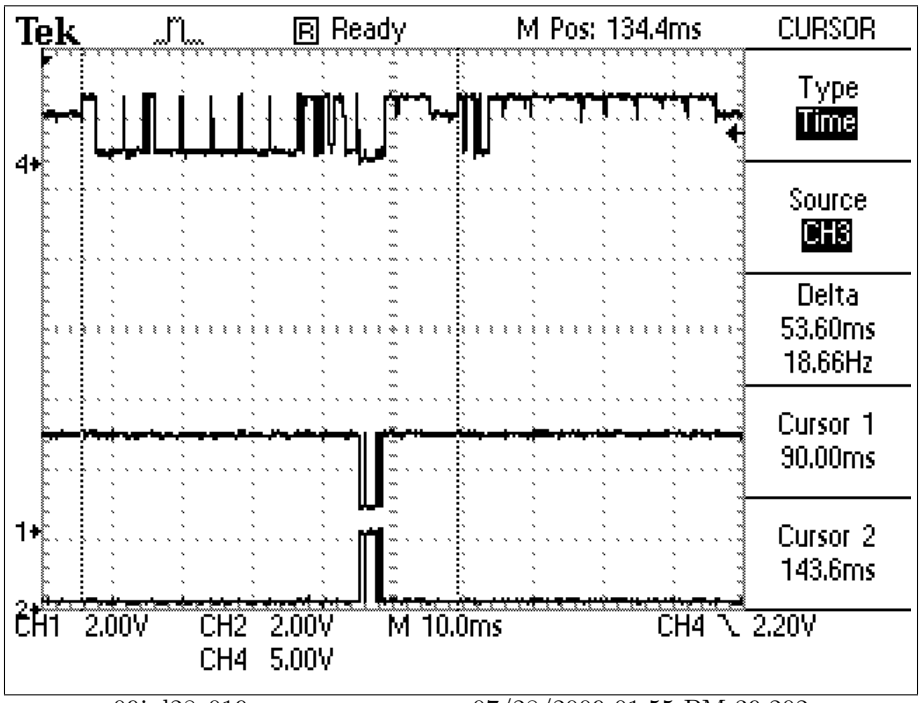


Figure 9: P Protocol, Address 1, Spectra IV, Command 2 to wierd byte

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

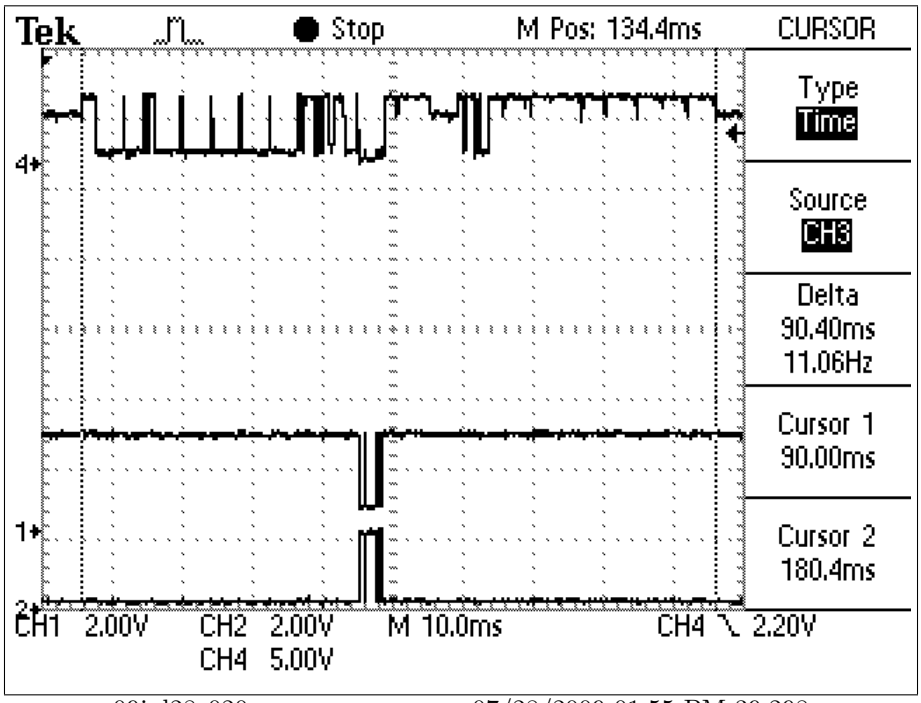


Figure 10: P Protocol, Address 1, Spectra IV, Command 1 expanded to final line seasure

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

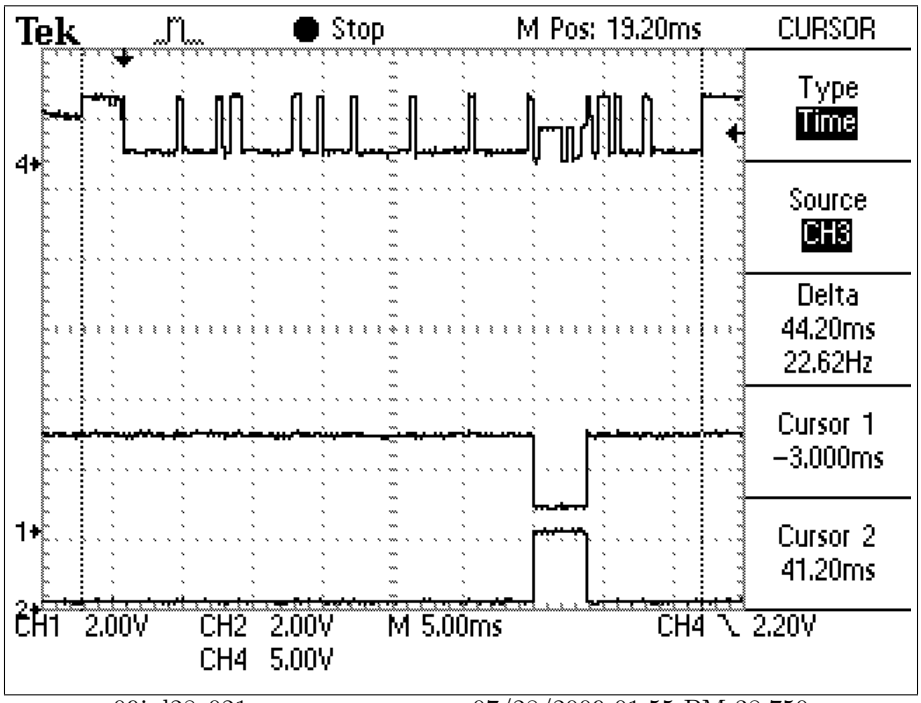


Figure 11: P Protocol, Address 1, Spectra IV, Command 1 expanded to end

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

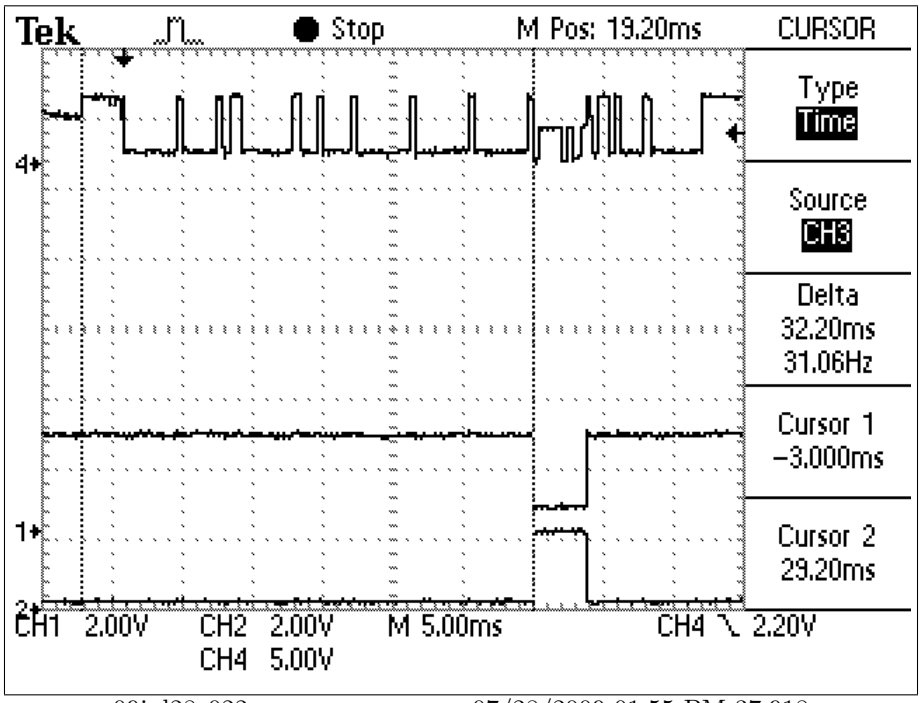


Figure 12: P Protocol, Address 1, Spectra IV, Command 1 expanded to `0x00` byte

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

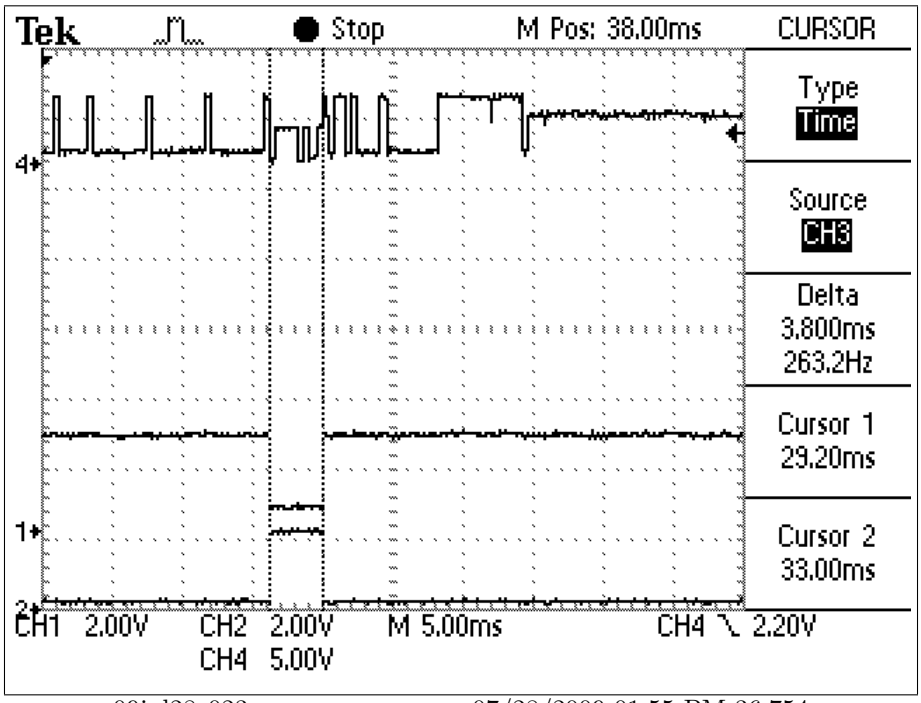


Figure 13: P Protocol, Address 1, Spectra IV, Command 1 duration of `0x00` byte

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

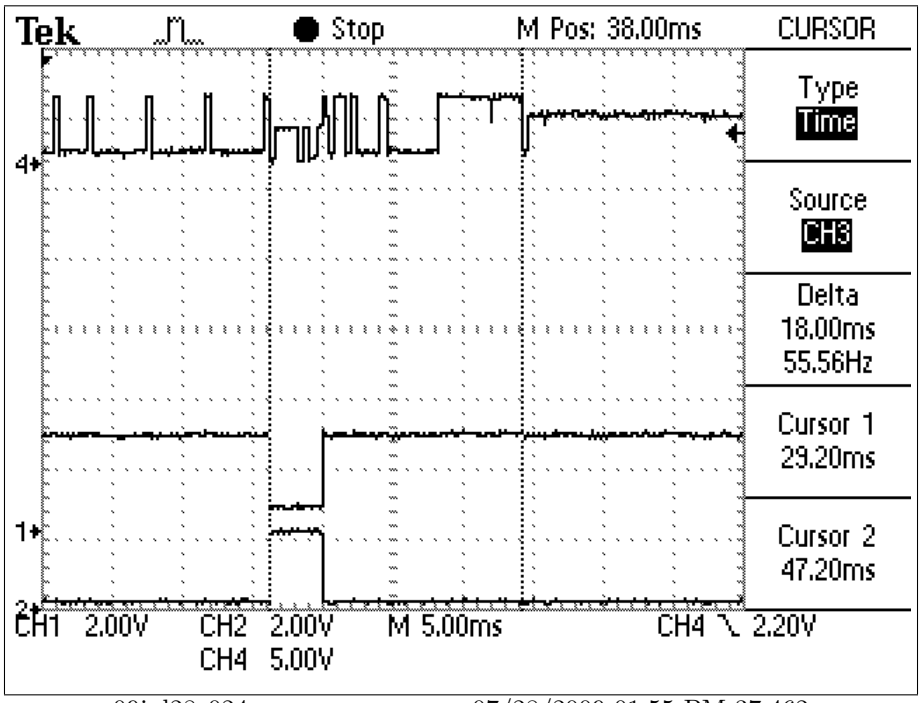


Figure 14: P Protocol, Address 1, Spectra IV, Command 2 Duration from `0x00` byt to end of line seasure

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

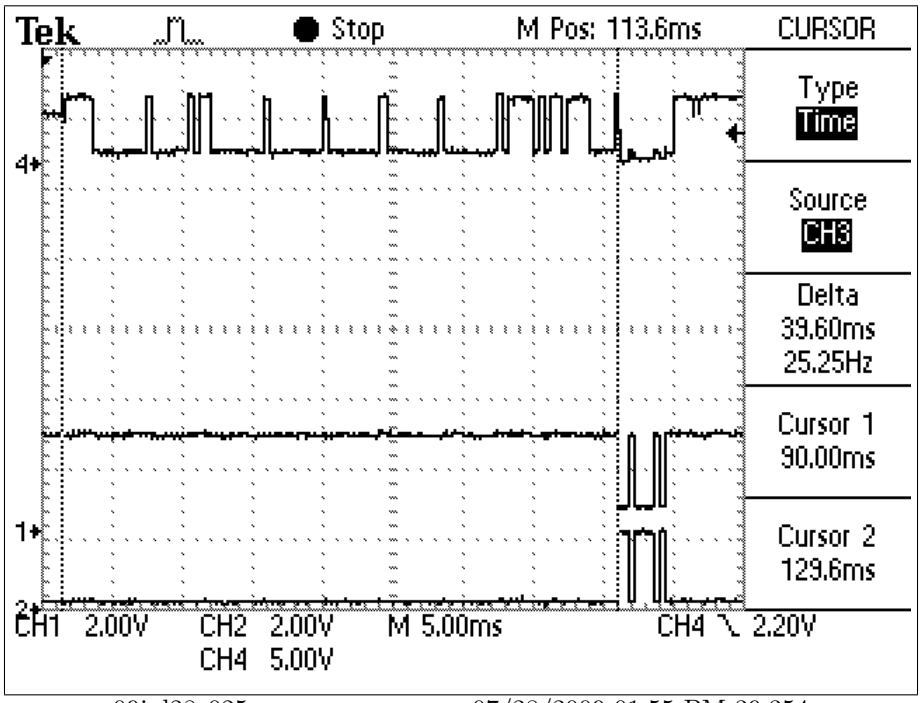


Figure 15: P Protocol, Address 1, Spectra IV, line seasure start to Ack

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

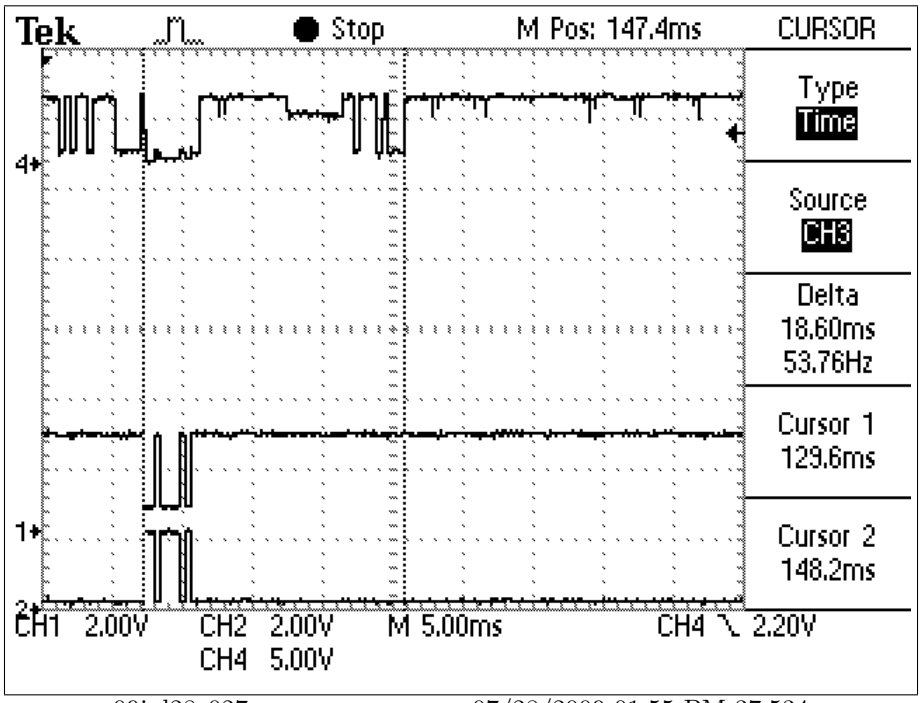


Figure 16: P Protocol, Address 1, Spectra IV, Command 2 to start of wierd byte to end of line seasure

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

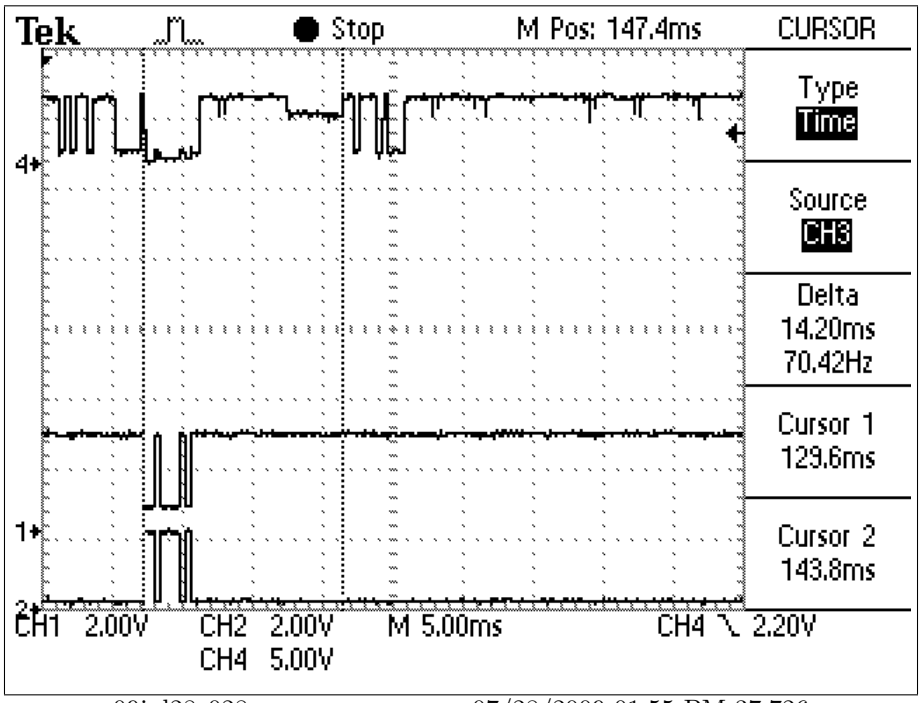


Figure 17: P Protocol, Address 1, Spectra IV, Command 2 Ack to start of second line seasure

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

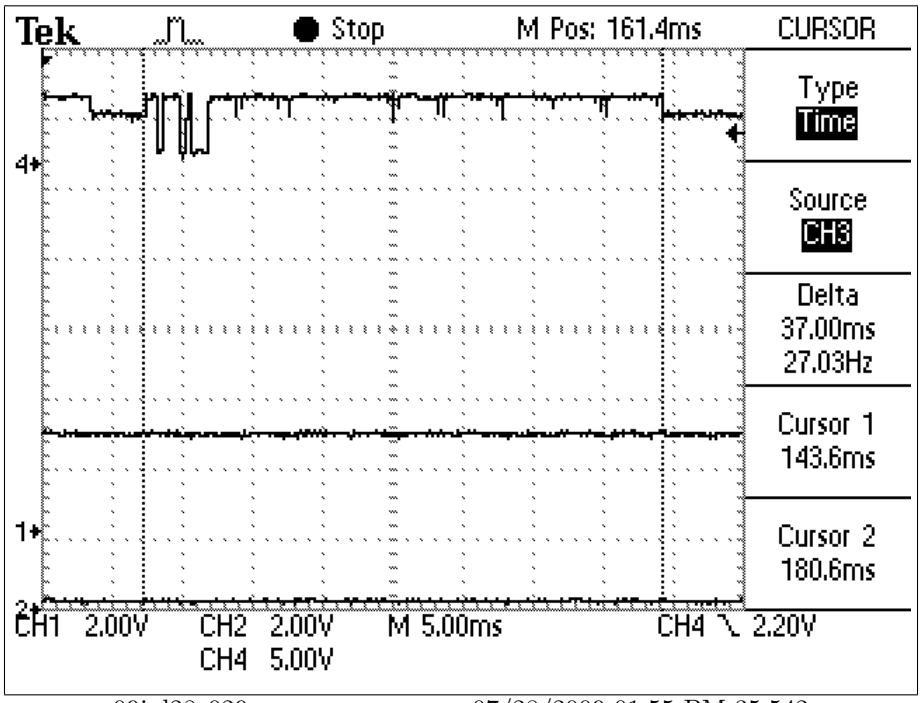


Figure 18: P Protocol, Address 1, Spectra IV, Command 2 Ack to end of last line seasure

Trace	Location	Use
4	Top	Tx+
3	Deleted	None
1	Near Bottom	RX+
2	Bottom	RX-

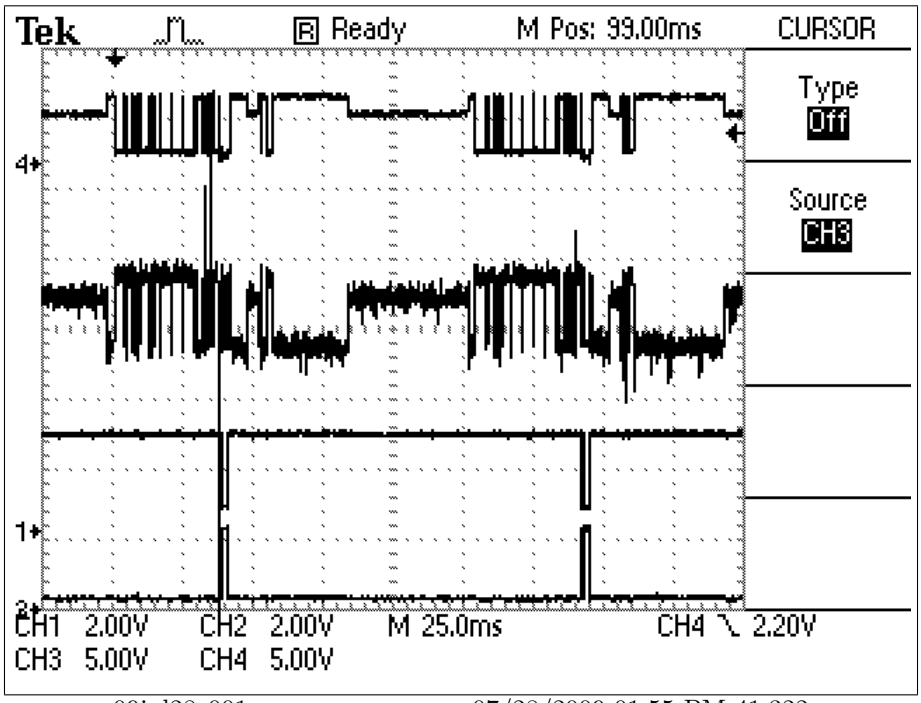


Figure 19: P Protocol, Address 2, Spectra IV, Iris open over all

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

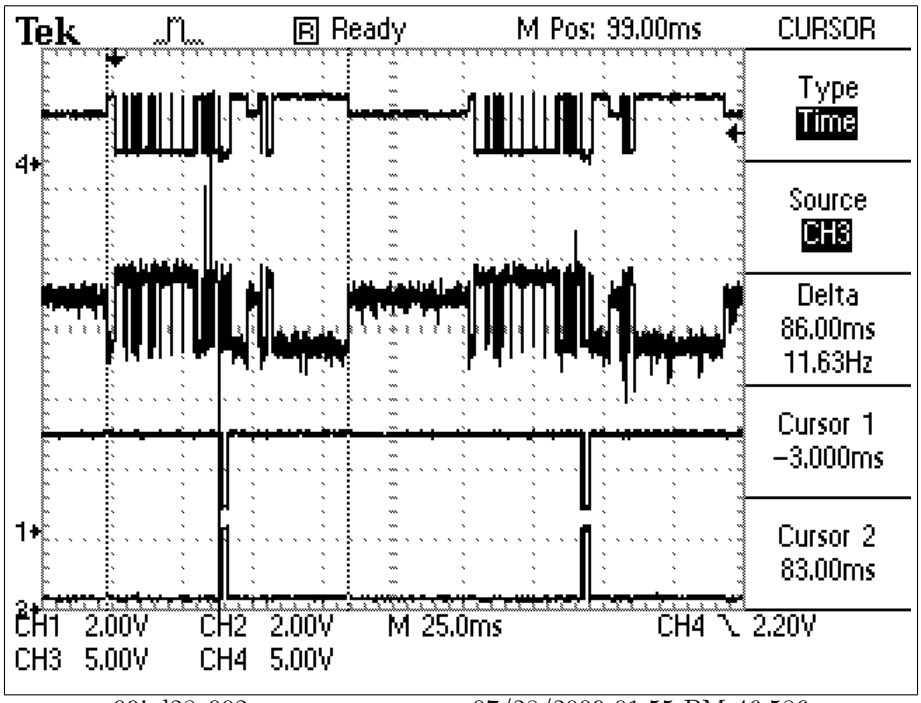


Figure 20: P Protocol, Address 2, Spectra IV, Time from line seasure until end first command

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

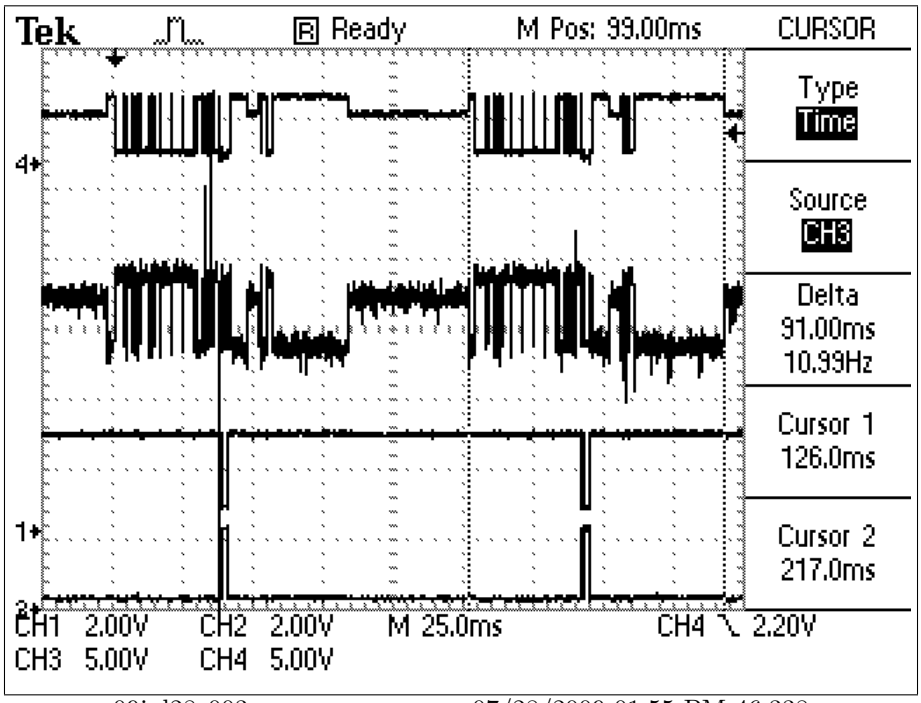


Figure 21: P Protocol, Address 2, Spectra IV, Time from line seasure until end of second command

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

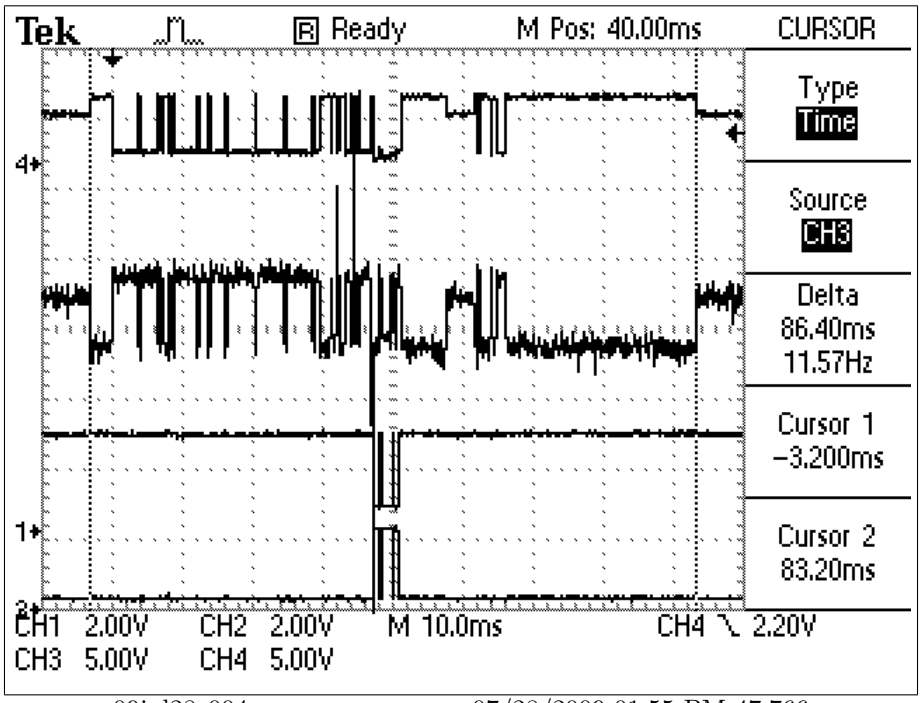


Figure 22: P Protocol, Address 2, Spectra IV, Command 1 Expanded

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

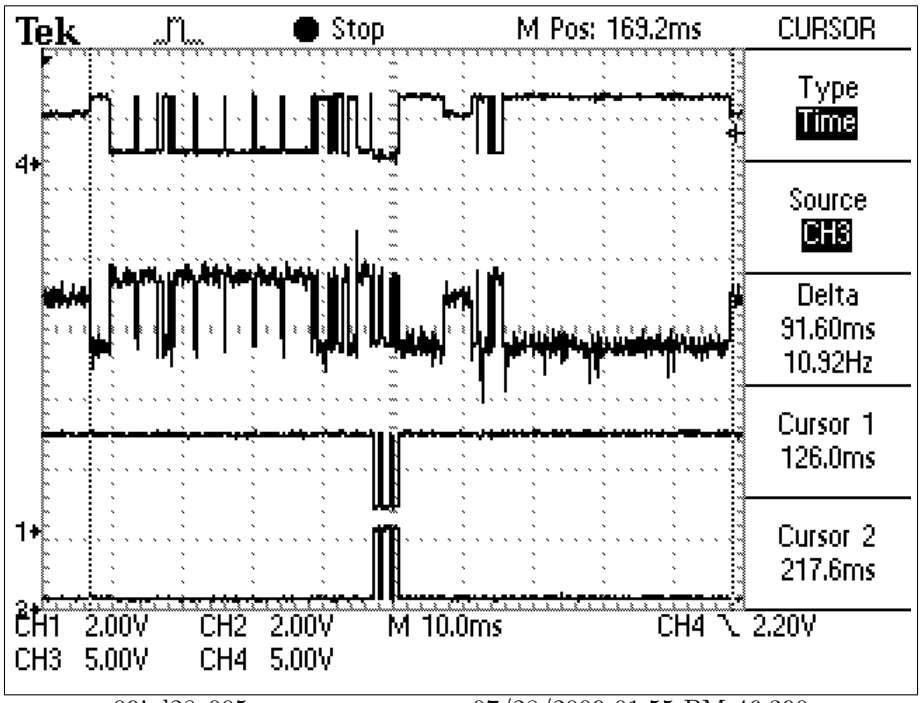


Figure 23: P Protocol, Address 2, Spectra IV, Command 2 Expanded

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

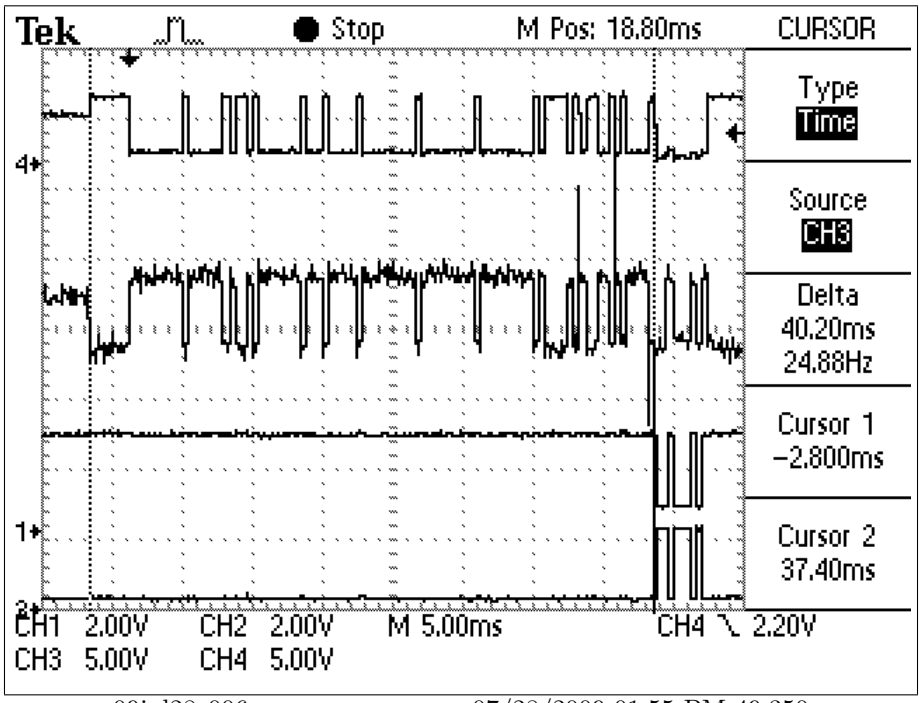


Figure 24: P Protocol, Address 2, Spectra IV, Command 1 to Acknowledgment time

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

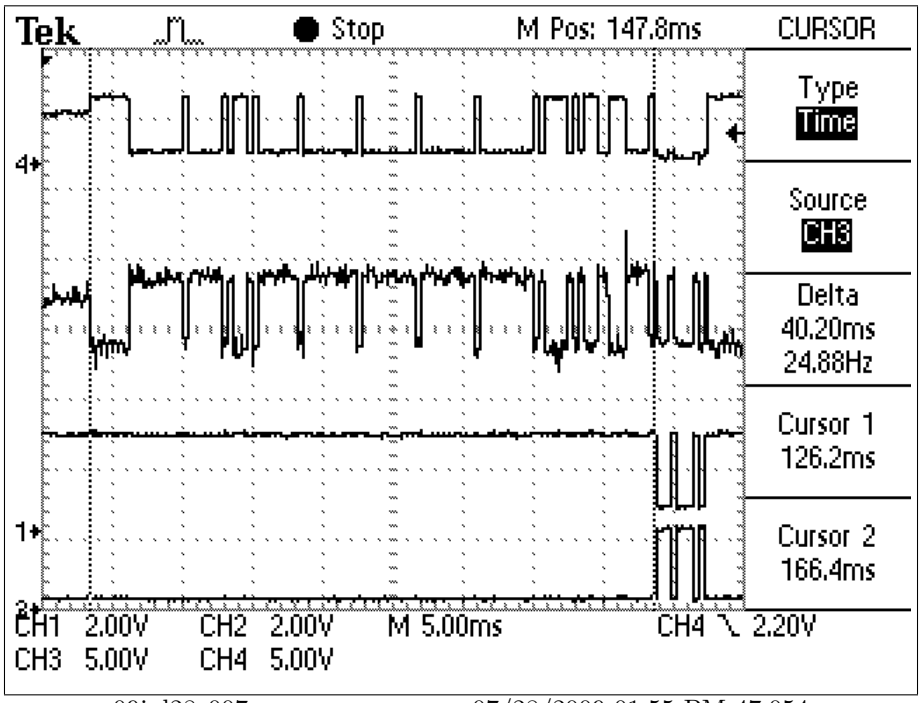


Figure 25: P Protocol, Address 2, Spectra IV, Command 2 to Acknowledgment time

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

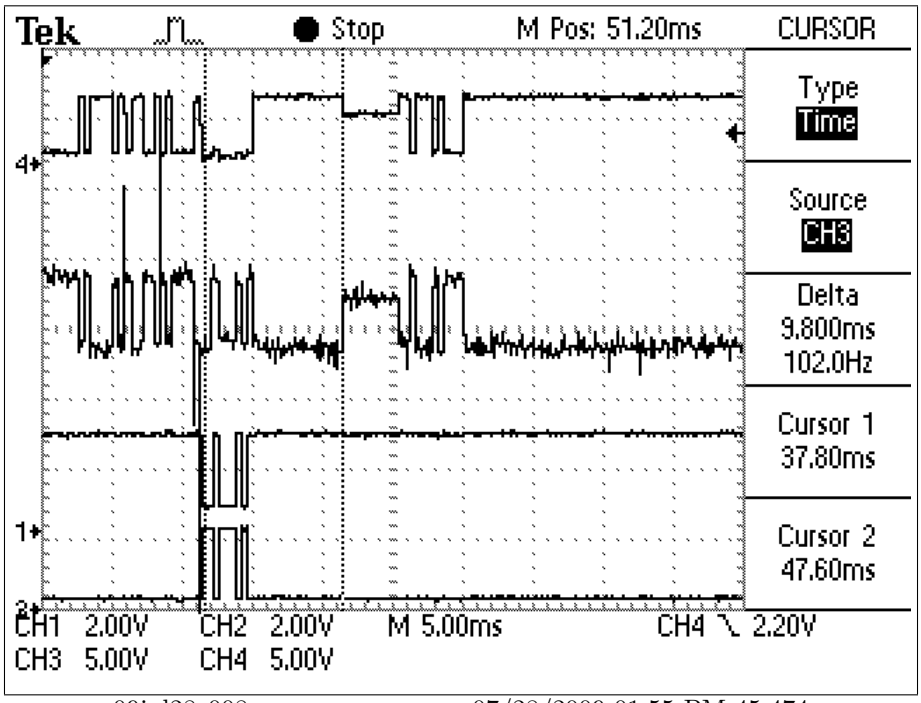


Figure 26: P Protocol, Address 2, Spectra IV, Command 1 Ack to end of first line seasure

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

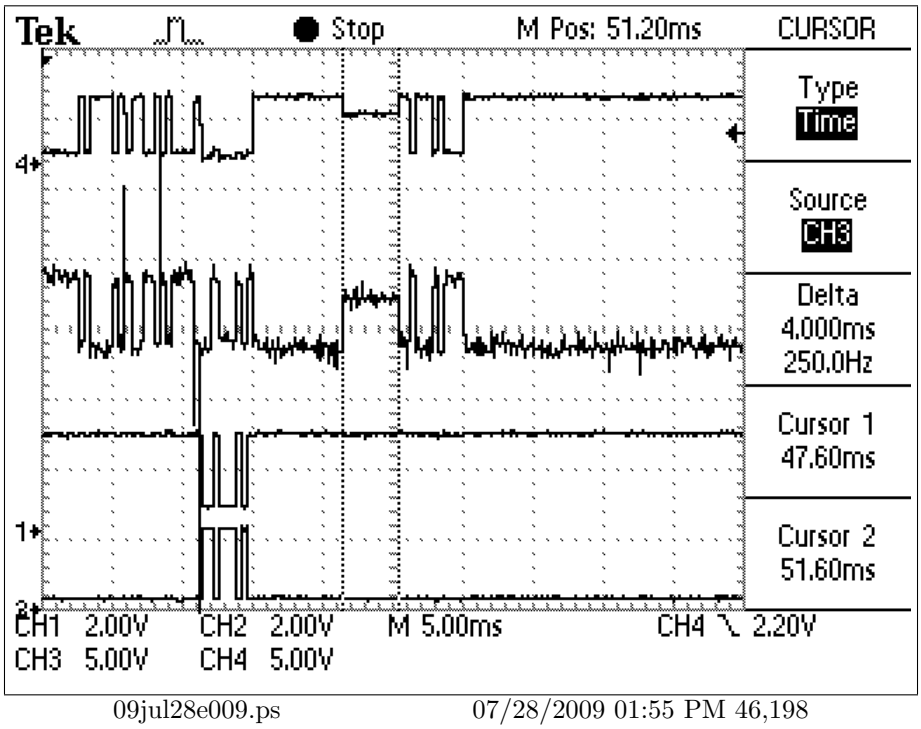


Figure 27: P Protocol, Address 2, Spectra IV, End of command 1 line seasure to first wierd byte

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

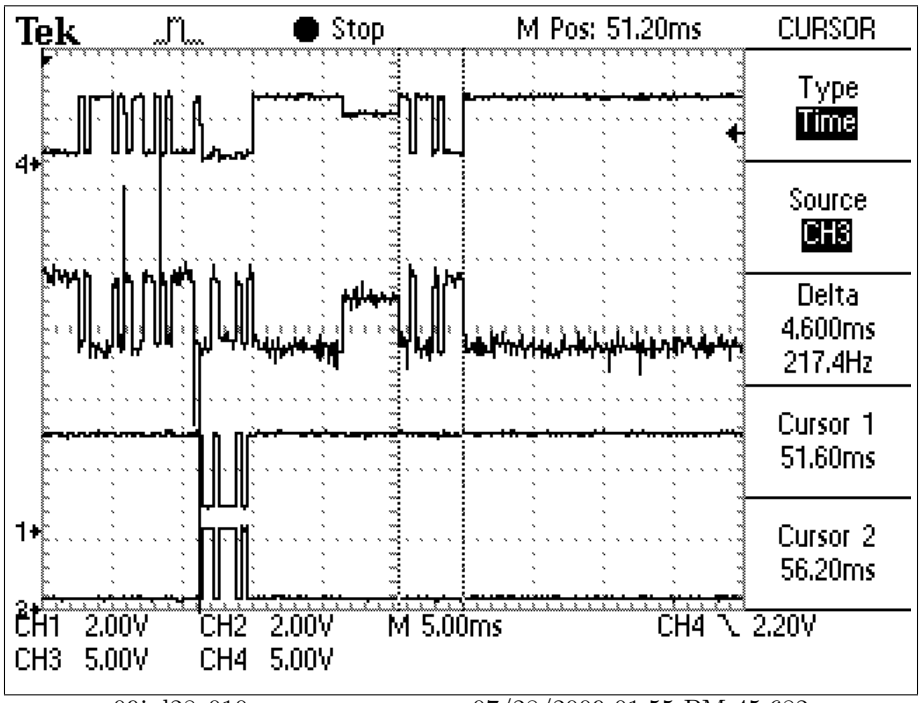


Figure 28: P Protocol, Address 2, Spectra IV, Duration of first wierd byte

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

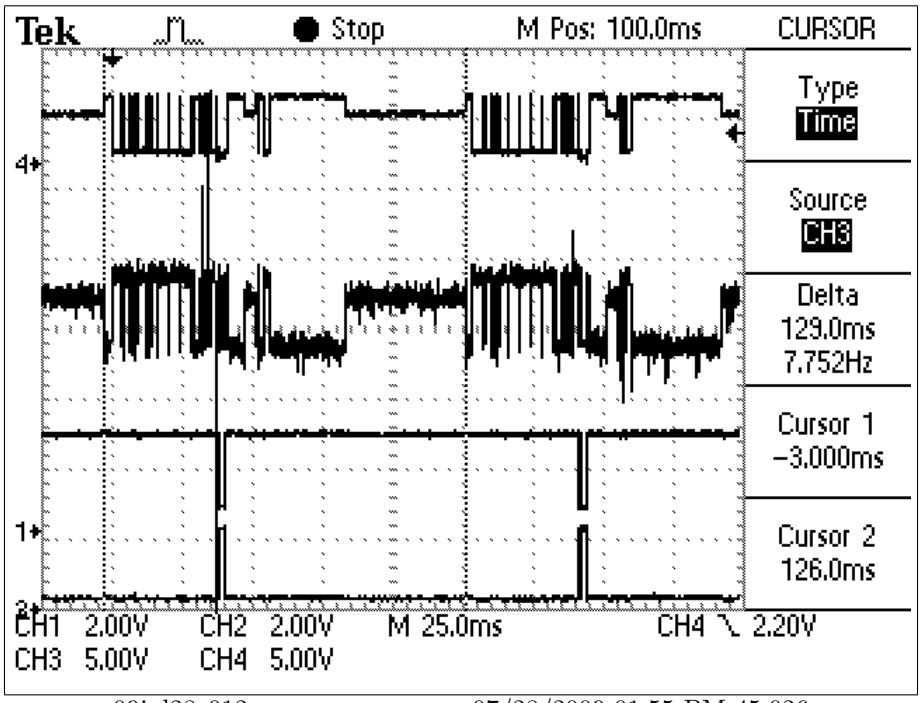


Figure 29: P Protocol, Address 2, Spectra IV, First command to second command

Trace	Location	Use
4	Top	Tx+
3	Near Top	TX-
1	Near Bottom	RX+
2	Bottom	RX-

Index