

Analysis of a SecuriTEST PRO

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¹\$Header: d:/Binder7/SecuriTEST/RCS/ST.tex,v 1.3 2009-05-08 07:57:27-07 Hamilton Exp Hamilton \$
⁴tocdepth = 4

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 manufacturer 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



SecuriTe

05/08/2009 07:37 AM

Figure 1: Ideal SecuriTEST PRO 33-892

⁵\$Header: d:/Binder7/SecuriTEST/RCS/part0.inc,v 1.1 2009-05-08 07:53:55-07 Hamilton Exp Hamilton \$

2 Data/Scope pictures of the SecuriTEST PRO and an Esprit with D Protocol

Note

1. These pictures were taken using a SecuriTEST PRO and an Esprit IOC running rev 3.85 software with a 35X camera installed.
2. The command sent is a “Wide” (Tele Wide) command, held down as short a time as practicable.
3. There are some “extra” transmissions at the start of the captures and that the last “stop” command has an overlap of something else that the SecuriTEST PRO generated.
4. Each time the Wide button is depressed, the exact timing and quantity of data produced is different. These results should be considered to be “typical” values.

2.1 ASCII data capture

This is an ASCII data capture of the same data shown in the following pictures. (A more extensive version without pictures is in Section 3, page 20.)

```

1 # $ Header: d:/Binder0/RCS/MsQ.1,v 1.1 2008-09-12 14:26:31-07 Hamilton Exp Hamilton $
2 # $Header: d:/Binder7/SecuriTEST/RCS/09APR27b.out,v 1.1 2009-04-27 10:15:27-07 Hamilton Exp Hamilton $
3 # Mon Apr 27 07:46:36 2009
4
5 # FTS capture buffer (4/27/2009 7:33:11 AM)
6 # Event 1 (4/27/2009 7:32:44.679132 AM) through
7 # Event 58 (4/27/2009 7:32:45.397968 AM)
8
9
10      1,      1: DTE    1    0.000000  0.000000 00
11      1,      2: DTE    2    0.004162  0.004162 ff
12      1,      3: DTE    3    0.008329  0.004167 01
13      1,      4: DTE    4    0.012495  0.004166 00
14      1,      5: DTE    5    0.016663  0.004168 40
15      1,      6: DTE    6    0.020828  0.004165 3b
16      1,      7: DTE    7    0.024996  0.004168 3b
17      1,      8: DTE    8    0.029161  0.004165 b7
18      1,      9: DTE    9    0.033329  0.004168 00
19
20      2,      1: DCE   10    0.034678  0.001349 ff
21      2,      2: DCE   11    0.038835  0.004157 01
22      2,      3: DCE   12    0.043003  0.004168 00
23      2,      4: DCE   13    0.047167  0.004164 b7
24
25      2,     10: DTE   14    0.061533  0.004164 00
26      2,     11: DTE   15    0.065699  0.004166 7f
27      2,     12: DTE   16    0.069866  0.004167 91
28      2,     13: DTE   17    0.099190  0.029324 c0
29      2,     14: DTE   18    0.208305  0.109115 00
30      2,     15: DTE   19    0.212470  0.004165 ff
31      2,     16: DTE   20    0.216638  0.004168 01
32      2,     17: DTE   21    0.220803  0.004165 00
33      2,     18: DTE   22    0.224980  0.004177 00
34      2,     19: DTE   23    0.229136  0.004156 00
35      2,     20: DTE   24    0.233303  0.004167 00
36      2,     21: DTE   25    0.237470  0.004167 01
37      2,     22: DTE   26    0.241635  0.004165 00
38
39      3,      5: DCE   27    0.243416  0.001781 ff
40      3,      6: DCE   28    0.247585  0.004169 01
41      3,      7: DCE   29    0.251750  0.004165 00
42      3,      8: DCE   30    0.255917  0.004167 01

```

⁶\$Header: d:/Binder7/SecuriTEST/RCS/Part1.inc,v 1.3 2009-05-08 07:57:27-07 Hamilton Exp Hamilton \$

4 2 DATA/SCOPE PICTURES OF THE SECURITEST PRO AND AN ESPRIT WITH D PROTOCO

```
43
44      3,      23: DTE  31    0.438489  0.004167 00
45      3,      24: DTE  32    0.442651  0.004162 ff
46      3,      25: DTE  33    0.446819  0.004168 01
47      3,      26: DTE  34    0.450985  0.004166 00
48      3,      27: DTE  35    0.455164  0.004179 00
49      3,      28: DTE  36    0.459318  0.004154 00
50      3,      29: DTE  37    0.463459  0.004141 00
51      3,      30: DTE  38    0.467626  0.004167 01
52      3,      31: DTE  39    0.471792  0.004166 00
53
54      4,      9: DCE   40    0.476335  0.004543 ff
55      4,     10: DCE   41    0.480500  0.004165 01
56      4,     11: DCE   42    0.484667  0.004167 00
57      4,     12: DCE   43    0.488834  0.004167 01
58
59      4,     32: DTE   44    0.668621  0.004167 00
60      4,     33: DTE   45    0.672756  0.004135 ff
61      4,     34: DTE   46    0.676924  0.004168 01
62      4,     35: DTE   47    0.681089  0.004165 00
63      4,     36: DTE   48    0.685255  0.004166 00
64      4,     37: DTE   49    0.689423  0.004168 00
65      4,     38: DTE   50    0.693590  0.004167 00
66      4,     39: DTE   51    0.697757  0.004167 01
67      4,     40: DTE   52    0.701923  0.004166 00
68      4,     41: DTE   53    0.705923  0.004000 00
69
70      5,     13: DCE   54    0.706167  0.000244 ff
71
72      5,     42: DTE   55    0.710256  0.000244 ff
73
74      6,     14: DCE   56    0.710530  0.000244 01
75      6,     15: DCE   57    0.714668  0.000244 00
76      6,     16: DCE   58    0.718836  0.000244 01
77
78 # There were a total of      58 bytes transferred
79
80 # There were a total of      16 DCE bytes transferred
81 # The first DCE byte came in at 0.034678 seconds from the start of data collection
82 # The last DCE byte was at 0.718836 seconds from the start of data collection
83
84 # There were a total of      42 DTE bytes transferred
85 # The first DTE byte came in at 0.000000 seconds from the start of data collection
86 # The last DTE byte was at 0.710256 seconds from the start of data collection
87
```

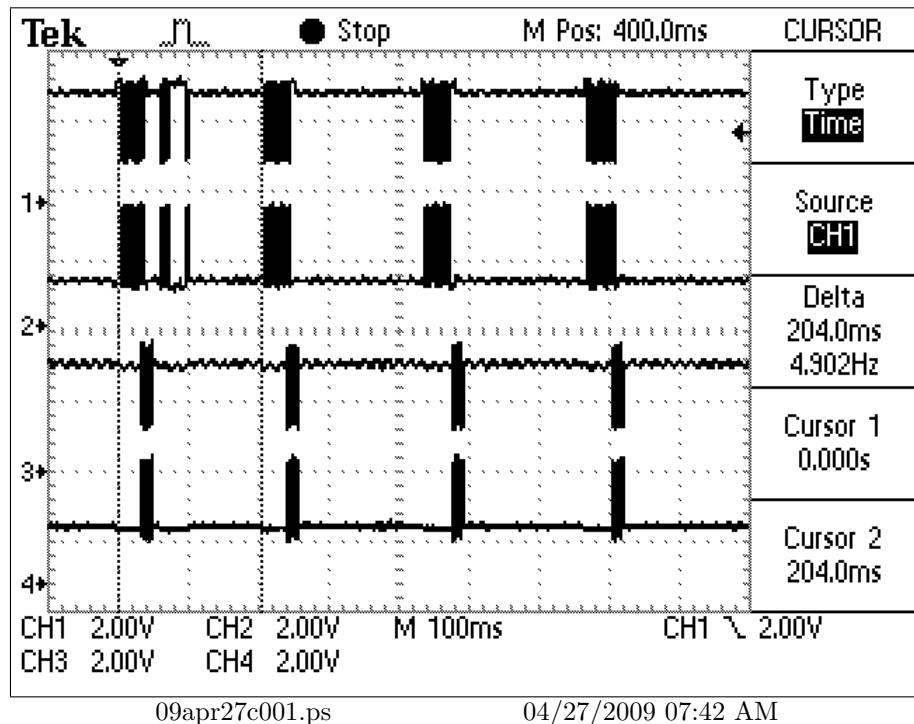


Figure 2: Time between the first and second commands

2.2 Scope captures, first capture series

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

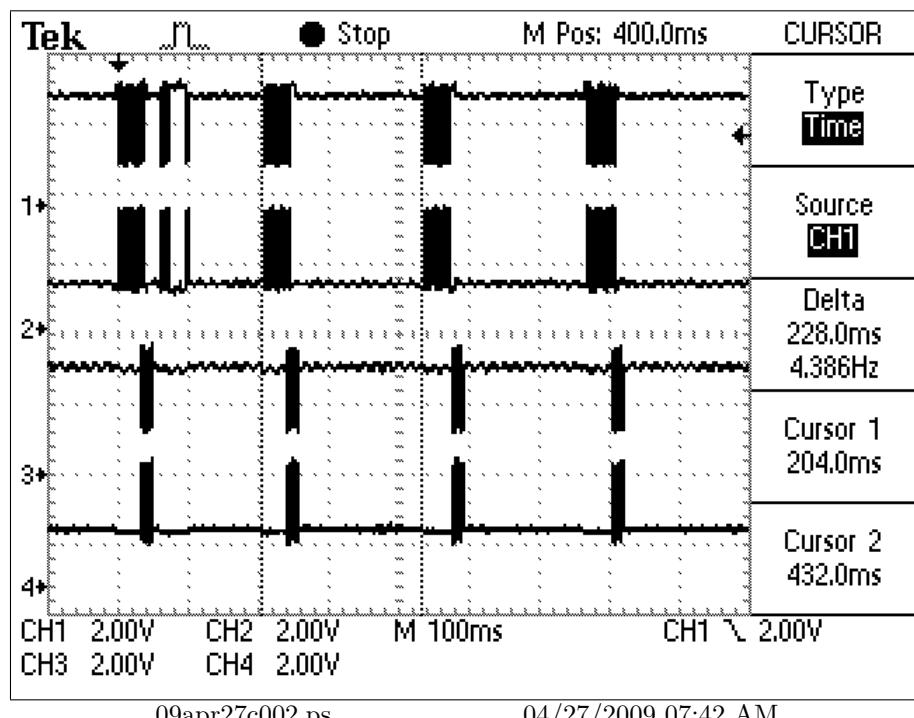


Figure 3: Time between the second and third commands

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

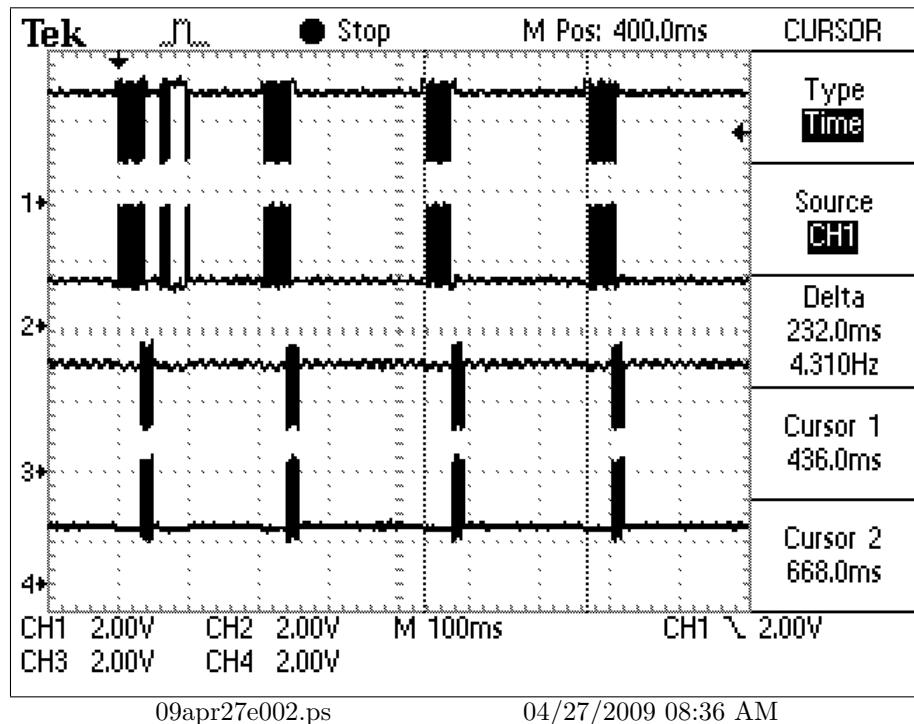


Figure 4: Time between the third and fourth command

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

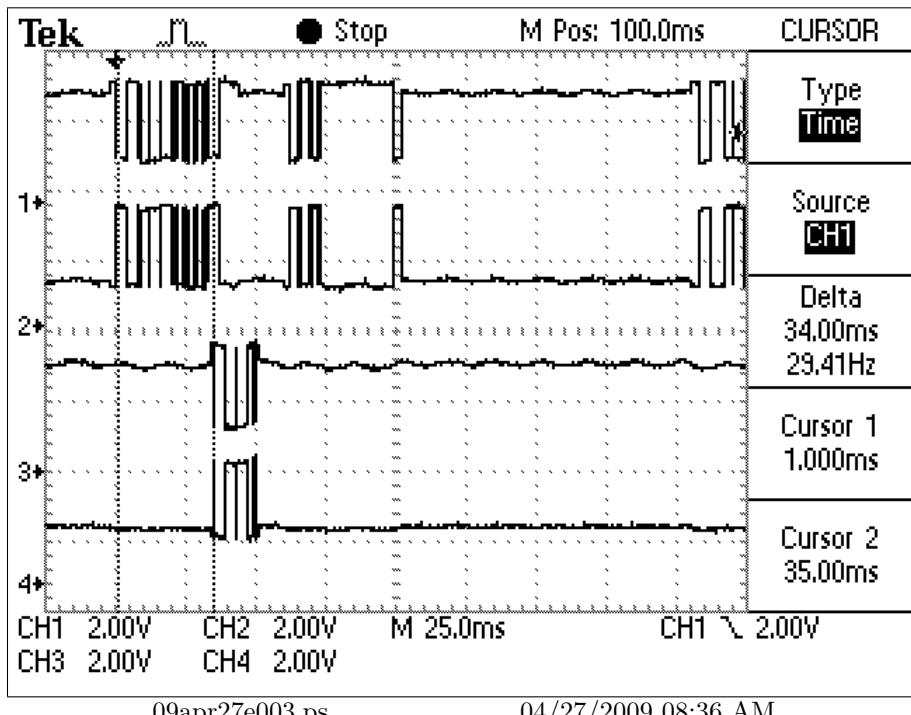


Figure 5: Time from the start of the first command and its reply

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

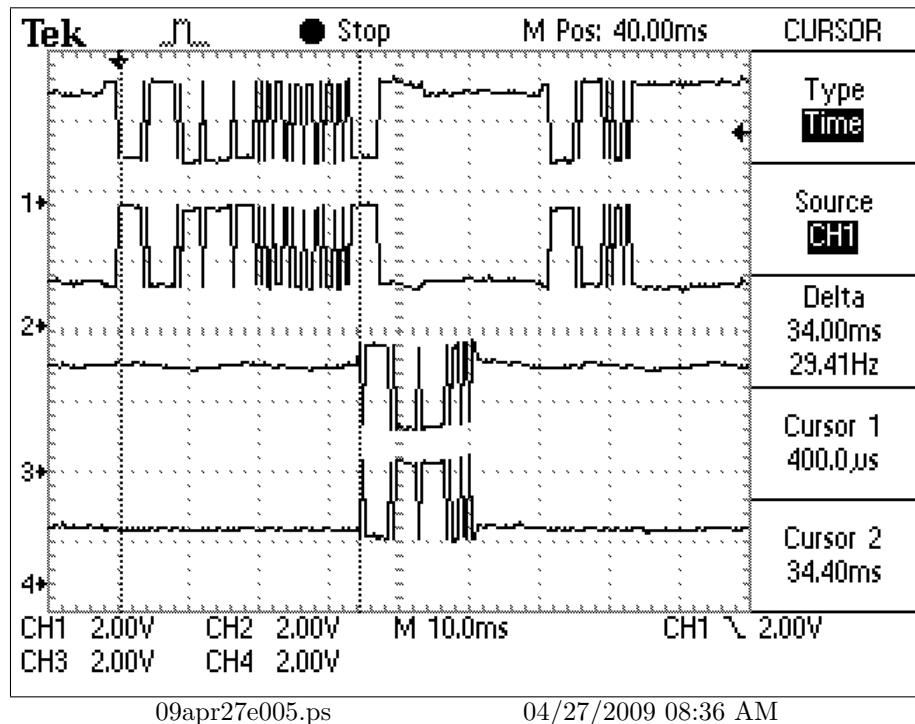


Figure 6: Details of the time between the start of the first command and its reply

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

10.2 DATA/SCOPE PICTURES OF THE SECURITEST PRO AND AN ESPRIT WITH D PROTOCOL

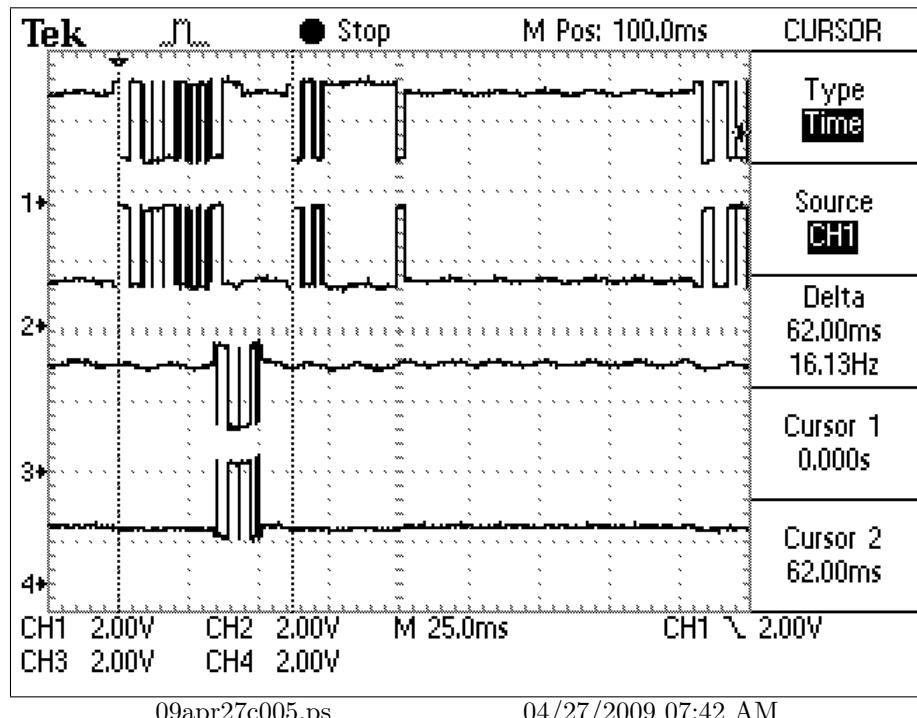


Figure 7: Time from the first command and the first extra data

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

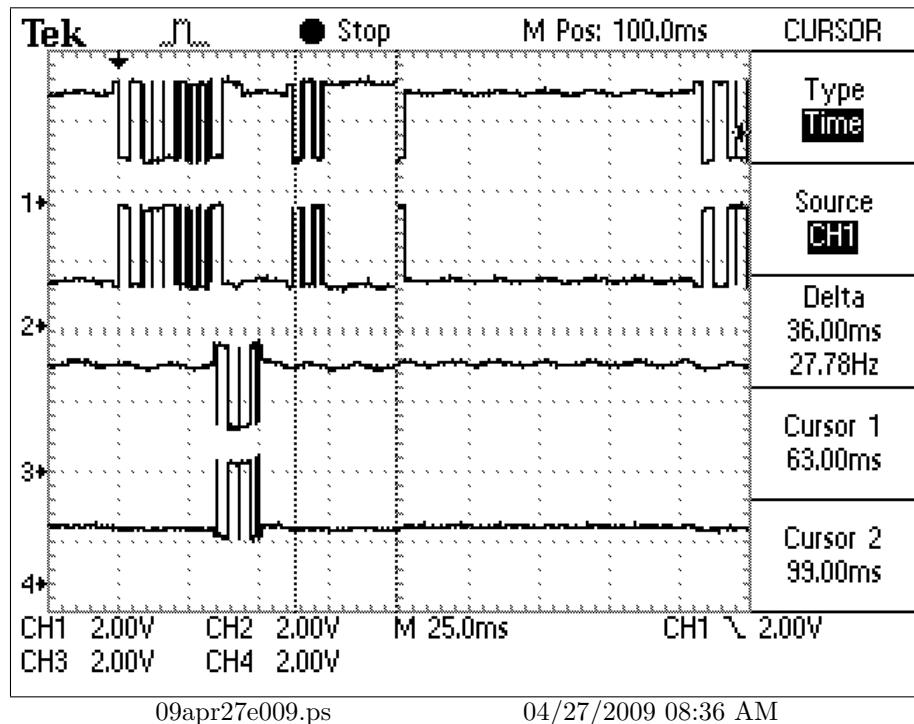


Figure 8: Time first extra data and the second extra data

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

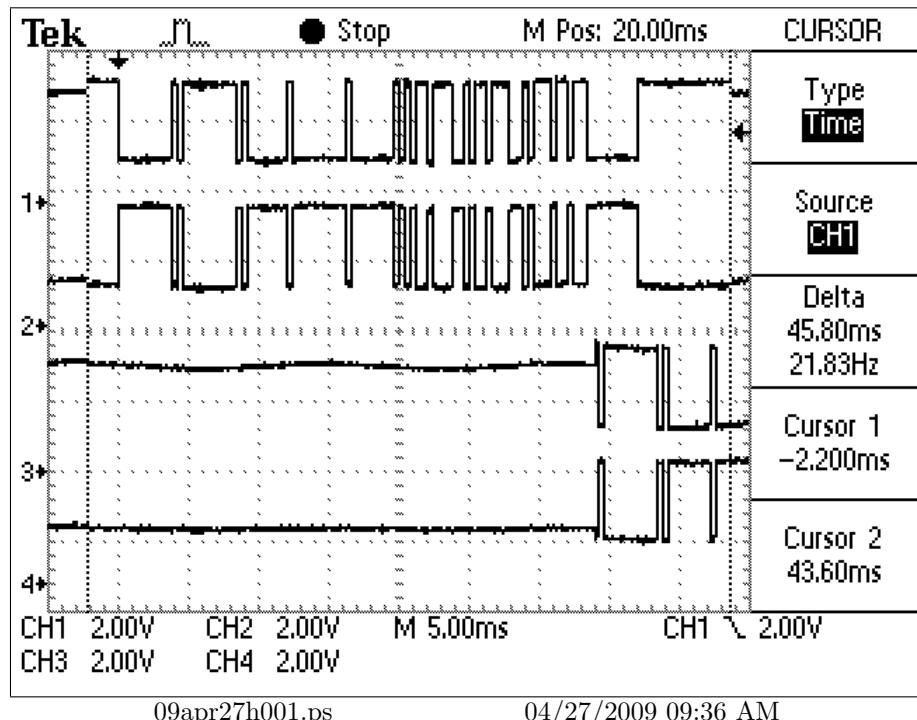


Figure 9: Sieze the line to release the line

2.3 Scope captures, second capture series

There are no associated ASCII data captures for this data.

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

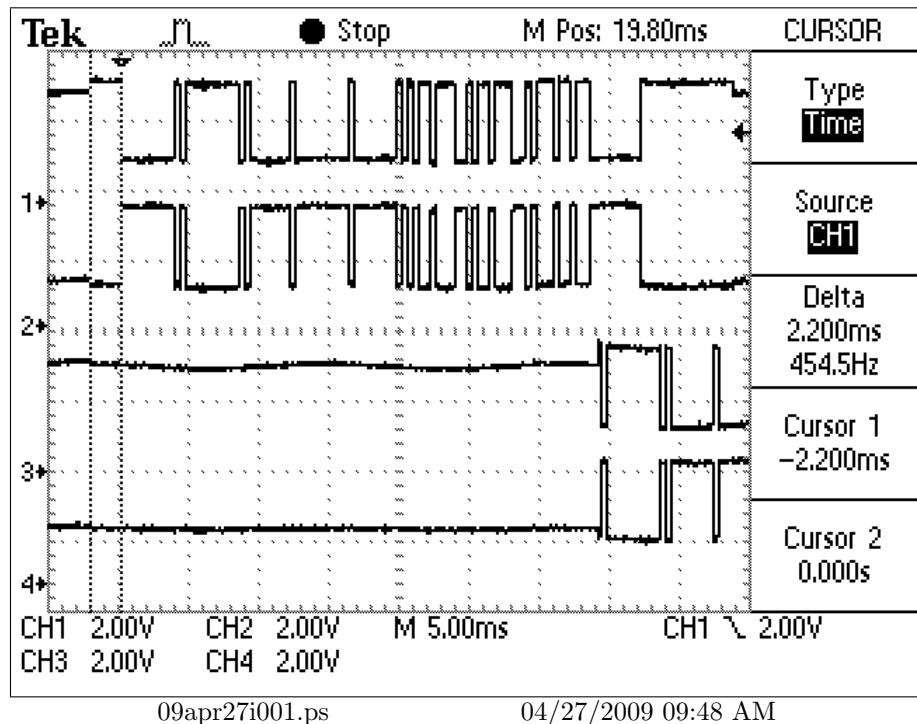


Figure 10: Initial seizure duration

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

14.2 DATA/SCOPE PICTURES OF THE SECURITEST PRO AND AN ESPRIT WITH D PROTOCOL

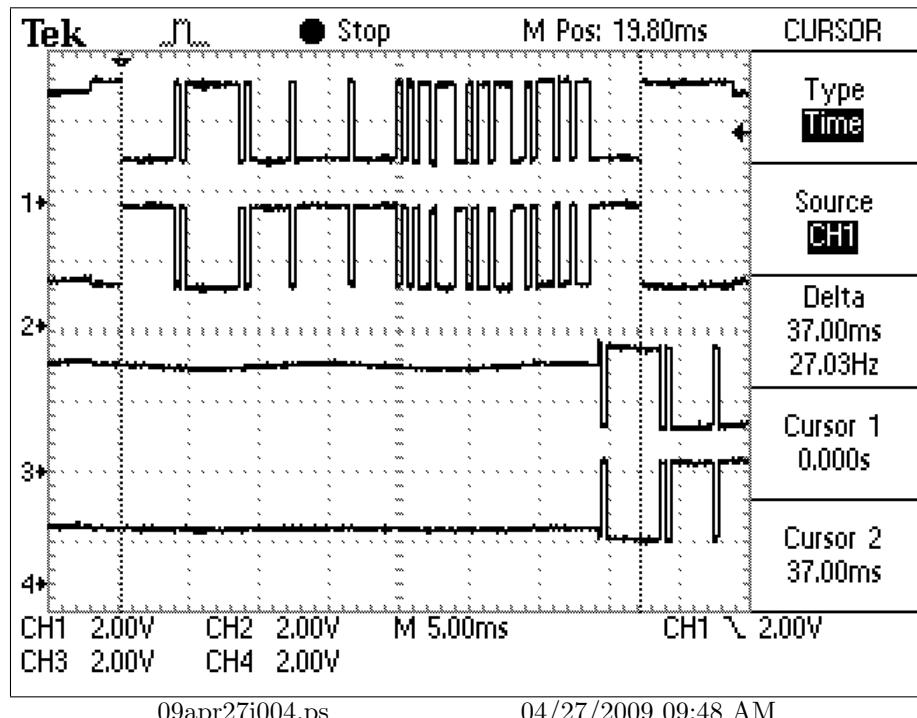


Figure 11: Time between the 0x00s

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

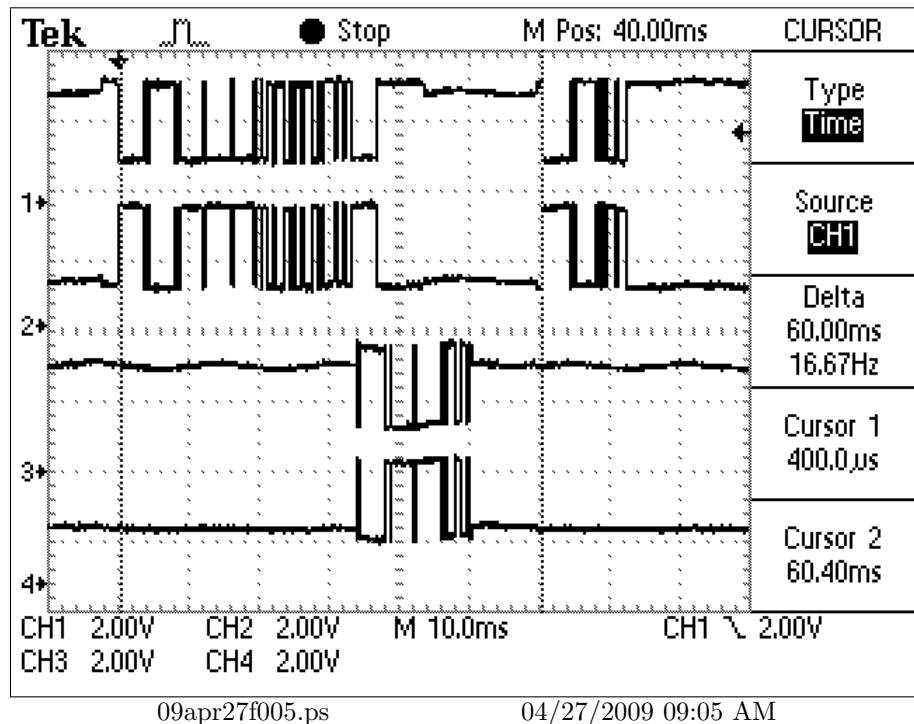


Figure 12: Time from the first 0x00 to the extra command

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

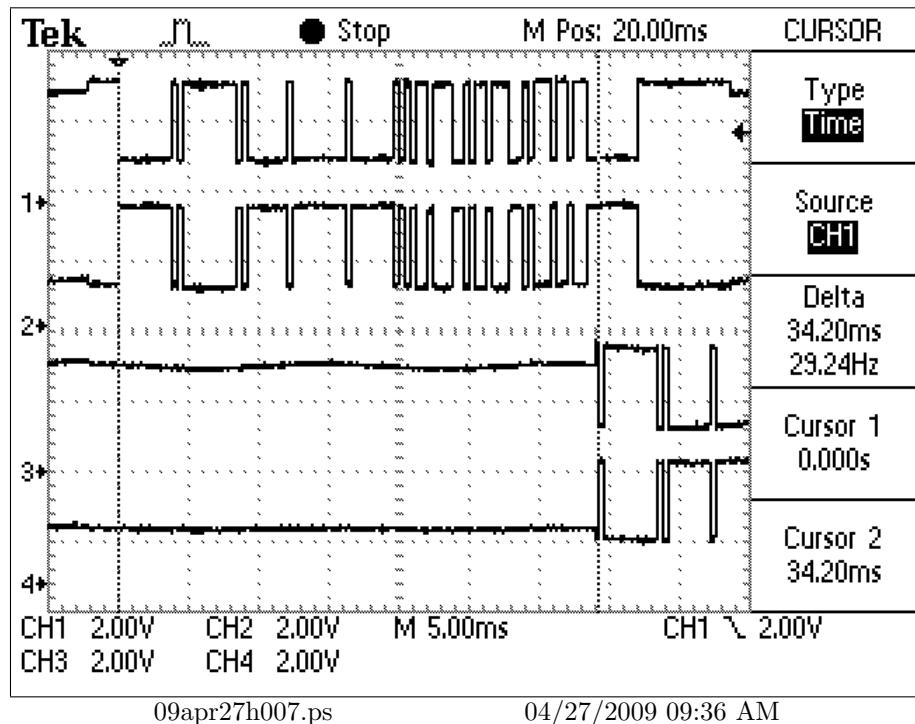


Figure 13: 0x00 to Esprit reply

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

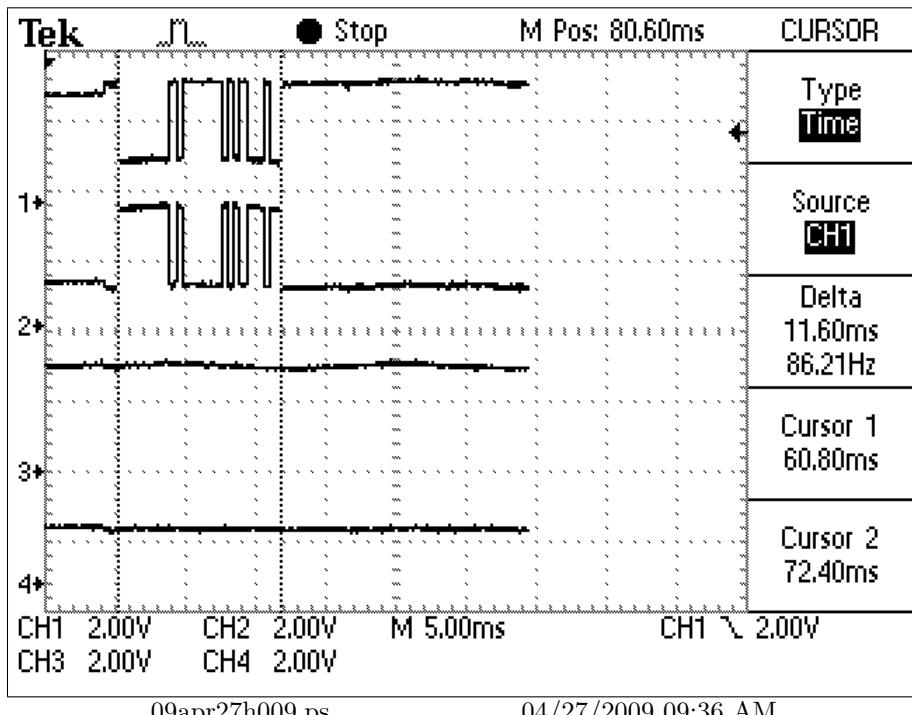


Figure 14: Extra command

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

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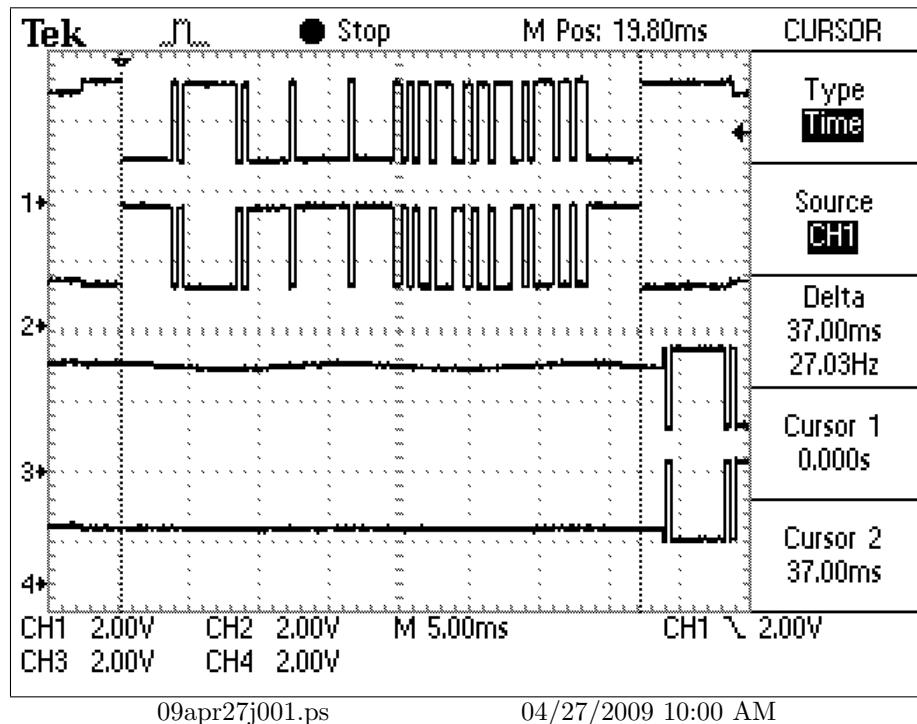


Figure 15: With the power supply for the SecuriTEST PRO disconnected

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

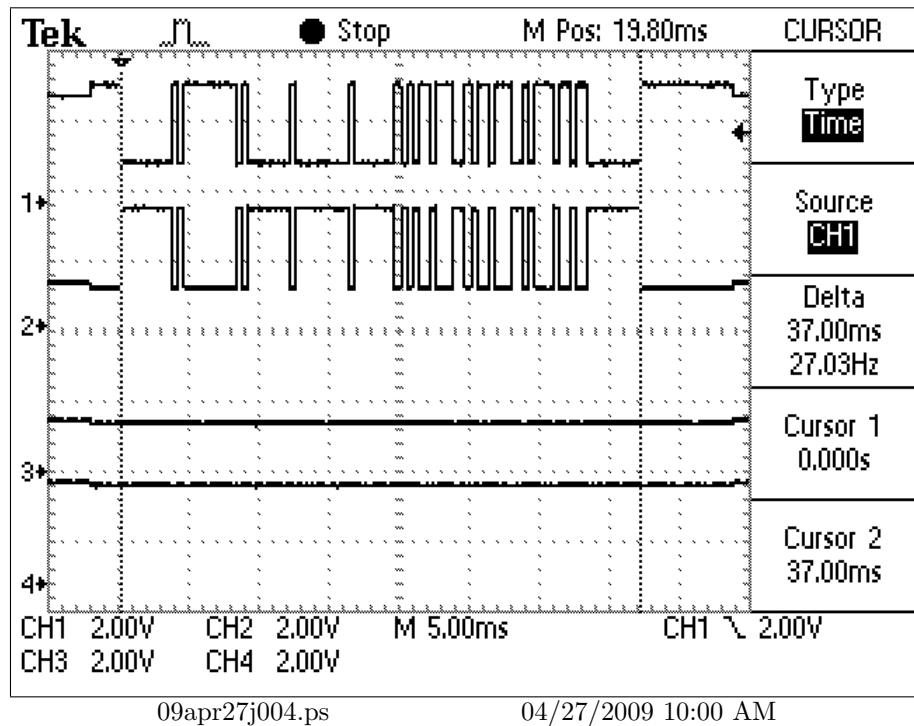


Figure 16: With the power supply for the SecuriTEST PRO and the Esprit disconnected

Trace	Use
1	TX+
2	TX-
3	RX+
4	RX-

3 ASCII data captures of D Protocol commands

The SecuriTEST PRO that was borrowed for this analysis had the following protocols available:

1. Supported Protocols: SecuriTEST PRO (33-892) and SecuriTEST (33-891):

As listed in an advertisement for the Ideal SecuriTEST/SecuriTEST PRO
("p-2755_securitest_brochure.pdf")

- 1.1 American Dynamics (AD RS-422),
- 1.2 Dongwong (DV-255RXC — D-max),
- 1.3 Dongwong (DV-SP360D — D-max),
- 1.4 Dynacolor (DYC),
- 1.5 Hitachi (SJ-100),
- 1.6 Hitron (Fastrak II),
- 1.7 Honeywell Korea (ScanDome II, HSDN-251N),
- 1.8 Kalatel ASCII (KTD-312),
- 1.9 Kalatel DIGI, SecuriTEST PRO (33-892) only
- 1.10 Oriental Electronic (ORX-1000),
- 1.11 Panasonic (WV-CS850),
- 1.12 Pelco D,
- 1.13 Pelco P (Spectra),
- 1.14 Samsung Electric (SCC-643),
- 1.15 Samsung Techwin (SPD-2500),
- 1.16 Sungjin (SJ100, SJ1000),
- 1.17 Toshiba (SJ-1000),
- 1.18 VCLTP, SecuriTEST PRO (33-892) only
- 1.19 Wonwoo (DRX Protocol, same as D-max Protocol),
- 1.20 Wonwoo Supermacy (DS series),
- 1.21 Wonwoo Supermacy (WSJ series),

2. Not listed on the SecuriTEST PRO, but listed on the advertisement:

- 2.1 Honeywell Korea (ScanDome II, HSDN-251N),
- 2.2 Sungjin (SJ100, SJ1000),
- 2.3 Wonwoo (DRX Protocol, same as D-max Protocol),
- 2.4 Wonwoo Supermacy (DS series),
- 2.5 Wonwoo Supermacy (WSJ series),

3. As listed on an Ideal SecuriTEST PRO. "First Looks" testing was planned using all these protocols, in this order. (This is the order of the protocols in the built in menu system of the SecuriTEST PRO):

⁷\$Header: d:/Binder7/SecuriTEST/RCS/Part2.inc,v 1.1 2009-05-01 06:43:13-07 Hamilton Exp Hamilton \$

- 3.1 VCLTP: VCLTP, SecuriTEST PRO (33-892) only
 - 3.2 PELCO-D: Pelco D
 - 3.3 PELCO P: Pelco P (Spectra)
 - 3.4 KTL-ASC: Kalatel ASCII (KTD-312)
 - 3.5 KTL-DIGI: Kalatel DIGI, SecuriTEST PRO (33-892) only
 - 3.6 YUJIN-PD: Not listed on the advertisement
 - 3.7 WONWOO: Not listed on the advertisement
 - 3.8 WV-CS850: Panasonic (WV-CS850)
 - 3.9 FASTRAK: Hitron (Fastrak II)
4. During the “First Looks” evaluation of these protocols, at this point the SecuriTEST PRO lost the ability to select protocols and testing was stopped. (And the SecuriTEST PRO was returned to its manufacturer for repair.)
- 4.1 FASTRAK: Not listed on the advertisement
 - 4.2 SPD-2500: Samsung Techwin (SPD-2500)
 - 4.3 SCC-643: Samsung Electric (SCC-643)
 - 4.4 SUPREMACY: Not listed on the advertisement
 - 4.5 AD RS-422: American Dynamics (AD RS-422)
 - 4.6 SJ-100: Hitachi (SJ-100)
 - 4.7 SJ-1000: Toshiba (SJ-1000)
 - 4.8 DYC: Dynacolor (DYC)
 - 4.9 DY-SP360D: Dongwong (DV-SP360D - D-max)
 - 4.10 DY-255RXC: Dongwong (DV-255RXC - D-max)
 - 4.11 ORX-1000: Oriental Electronic (ORX-1000)
 - 4.12 VICON: Not listed on the advertisement
 - 4.13 LG MULTI: Not listed on the advertisement

Order of command sending. The indicated key was depressed for about four seconds and then let up for about 10 seconds. As I sometimes got “distracted” both of these times are very approximate.

1. For all units tested.
 - 1.1 Far
 - 1.2 Near
 - 1.3 Tele
 - 1.4 Wide
 - 1.5 Open (Omega)
 - 1.6 Close (4 mA)
 - 1.7 Up
 - 1.8 Right

- 1.9 Down
- 1.10 Left
- 1.11 Up-Right
- 1.12 Right-Down
- 1.13 Down-Left
- 1.14 Left-Up

2. For testing with D Protocol, with and without having an Esprit connected.

- 2.1 Right-Tele
- 2.2 Right-Open
- 2.3 Right-Open-Tele
- 2.4 Right-Open-Tele-Far
- 2.5 Right-Open-Tele-Far-Up

3.1 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.

3.1.1 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

3.1.2 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

3.1.3 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

3.1.4 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
DCE	240.259719	0.129909	0.109850	:R FCC7 00
DTE	240.263163	0.003444	0.001314	:R FCC7 00

3.1.5 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 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.

3.2 D Protocol commands sent by a SecuriTEST PRO without an Esprit connected

In this data capture the SecuriTEST PRO was not connected to any type of PTZ unit. This is a process that I use in getting a “First Look” at Foreign protocols. We do not always have every competitor’s PTZ unit available, but when we can generate any valid command that might be able to control them, I make an effort to do a data capture with no PTZ connected. Some protocols will “hang up” when nothing is connected, but even that is better than nothing.

Here are a set of D Protocol commands sent when there was nothing to receive them. What should be noted here is that most of the commands are formatted correctly **except** the extra beginning and ending 0x00 bytes. Fortunately the 0x00 bytes are harmless and do not have much affect on the Esprit.

An unexpected discovery here is the speed at which commands repeat (except for the Iris commands which do not repeat in any protocol supported by the SecuriTEST PRO.). The rapid repeat rate of about 66 ms, it was totally unexpected and causes problems with an Esprit (or Spectra, ExSite, etc.). The commands are coming in too fast for processing. Usually the commands will be “silently ignored” and processing will appear to operate “normally”.

The data capture was done at 2400 baud. The time in the “Since” column of “0.004...” is the normal time to send a single character. The extra digits are “hollow accuracy” and may be ignored.

```

1  # $ Header: d:/Binder0/RCS/MsQ.1,v 1.1 2008-09-12 14:26:31-07 Hamilton Exp Hamilton $
2  # $Header: d:/Binder7/SecuriTEST/RCS/09APR27L.D,v 1.5 2009-05-01 07:12:53-07 Hamilton Exp Hamilton $
3  # Mon Apr 27 10:55:33 2009
4
5  # D Protocol, no Esprit connected
6  # When multiple buttons are depressed, then the exact start and stops are
7  # not "pure" due to the deltas inbetween button depressing.
8
9  # DTE = The SecuriTEST PRO
10 # DCE = The non-connected Esprit
11
12 # FTS capture buffer (4/27/2009 10:39:30 AM)
13 # Event 1 (4/27/2009 10:33:49.191009 AM) through
14 # Event 8,033 (4/27/2009 10:39:05.884412 AM)
15
16 Far
17   1,      1: DTE    1    0.000000  0.000000 00 ff 01 00 80 3b 3b f7 00
18   1,     10: DTE   10    0.099189  0.065863 00 ff 01 00 80 3b 3b f7 00
19   1,    19: DTE   19    0.198356  0.065863 00 ff 01 00 80 3b 3b f7 00
20   1,   28: DTE   28    0.297601  0.065913 00 ff 01 00 80 3b 3b f7 00
21 < over 40 identical command lines deleted here >
22   1,   397: DTE  397    4.364893  0.065861 00 ff 01 00 80 3b 3b f7 00
23   1,   406: DTE  406    4.464110  0.065912 00 ff 01 00 80 3b 3b f7 00
24
25 Stop
26   1,   415: DTE  415    4.573272  0.075829 00 ff 01 00 00 00 00 01 00
27   1,   424: DTE  424    4.803406  0.196849 00 ff 01 00 00 00 00 01 00
28   1,   433: DTE  433    5.033494  0.196806 00 ff 01 00 00 00 00 01 00
29
30 Near
31   1,   442: DTE  442    17.760266 12.693396 00 ff 01 01 00 3b 3b 78 00
32   1,   451: DTE  451    17.859428  0.065858 00 ff 01 01 00 3b 3b 78 00
33 < over 50 identical command lines deleted here >
34   1,   919: DTE  919    23.017973  0.065858 00 ff 01 01 00 3b 3b 78 00
35   1,   928: DTE  928    23.117166  0.065862 00 ff 01 01 00 3b 3b 78 00
36   1,   937: DTE  937    23.216410  0.065912 00 ff 01 01 00 3b 3b 78 00
37   1,   946: DTE  946    23.315578  0.065894 00 ff 01 01 00 3b 3b 78 00
38
39 Stop
40   1,   955: DTE  955    23.424722  0.075813 00 ff 01 00 00 00 00 01 00
41   1,   964: DTE  964    23.654876  0.196854 00 ff 01 00 00 00 00 01 00
42   1,   973: DTE  973    23.885006  0.196802 00 ff 01 00 00 00 00 01 00
43
44 Tele

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45      1,      982: DTE  982    35.370714 11.452378 00 ff 01 00 20 3b 3b 97 00
46      1,      991: DTE  991    35.469907 0.065864 00 ff 01 00 20 3b 3b 97 00
47 < over 40 identical command lines deleted here >
48      1,     1369: DTE  1369   39.636418 0.065864 00 ff 01 00 20 3b 3b 97 00
49      1,     1378: DTE  1378   39.735609 0.065861 00 ff 01 00 20 3b 3b 97 00
50      1,     1387: DTE  1387   39.834854 0.065941 00 ff 01 00 20 3b 3b 97 00
51      1,     1396: DTE  1396   39.933852 0.065692 00 ff 01 00 20 3b 3b 97 00
52      1,     1405: DTE  1405   40.033265 0.066080 00 ff 01 00 20 3b 3b 97 00
53
54 Stop
55      1,     1414: DTE  1414   40.142380 0.075809 00 ff 01 00 00 00 00 01 00
56      1,     1423: DTE  1423   40.372512 0.196801 00 ff 01 00 00 00 00 01 00
57      1,     1432: DTE  1432   40.602694 0.196878 00 ff 01 00 00 00 00 01 00
58
59 Wide
60      1,     1441: DTE  1441   53.387907 12.751909 00 ff 01 00 40 3b 3b b7 00
61      1,     1450: DTE  1450   53.487101 0.065865 00 ff 01 00 40 3b 3b b7 00
62 < over 45 identical command lines deleted here >
63      1,     1873: DTE  1873   58.149623 0.065859 00 ff 01 00 40 3b 3b b7 00
64      1,     1882: DTE  1882   58.248870 0.065914 00 ff 01 00 40 3b 3b b7 00
65      1,     1891: DTE  1891   58.348035 0.065860 00 ff 01 00 40 3b 3b b7 00
66
67 Stop
68      1,     1900: DTE  1900   58.457016 0.075648 00 ff 01 00 00 00 00 01 00
69      1,     1909: DTE  1909   58.687309 0.196946 00 ff 01 00 00 00 00 01 00
70      1,     1918: DTE  1918   58.917466 0.196844 00 ff 01 00 00 00 00 01 00
71
72 Open
73      1,     1927: DTE  1927   70.419007 11.468212 00 ff 01 02 00 00 00 03 00
74
75 Stop
76      1,     1936: DTE  1936   75.287888 4.835554 00 ff 01 00 00 00 00 01 00
77
78 Close
79      1,     1945: DTE  1945   87.954090 12.632900 00 ff 01 04 00 00 00 05 00
80
81 Stop
82      1,     1954: DTE  1954   92.903336 4.915918 00 ff 01 00 00 00 00 01 00
83
84 Up
85      1,     1963: DTE  1963   106.329266 13.392602 00 ff 01 00 08 3b 3b 7f 00
86      1,     1972: DTE  1972   106.428622 0.065861 00 ff 01 00 08 3b 3b 7f 00
87 < over 40 identical command lines deleted here >
88      1,     2359: DTE  2359   110.694385 0.065918 00 ff 01 00 08 3b 3b 7f 00
89      1,     2368: DTE  2368   110.793546 0.065861 00 ff 01 00 08 3b 3b 7f 00
90      1,     2377: DTE  2377   110.892745 0.065867 00 ff 01 00 08 3b 3b 7f 00
91      1,     2386: DTE  2386   110.991957 0.066080 00 ff 01 00 08 3b 3b 7f 00
92      1,     2395: DTE  2395   111.091152 0.065863 00 ff 01 00 08 3b 3b 7f 00
93
94 Stop
95      1,     2404: DTE  2404   111.200265 0.075807 00 ff 01 00 00 00 00 01 00
96      1,     2413: DTE  2413   111.430450 0.196853 00 ff 01 00 00 00 00 01 00
97      1,     2422: DTE  2422   111.660581 0.196801 00 ff 01 00 00 00 00 01 00
98
99 Right
100     1,     2431: DTE  2431   123.315923 11.622040 00 ff 01 00 02 3b 3b 79 00
101     1,     2440: DTE  2440   123.415087 0.065862 00 ff 01 00 02 3b 3b 79 00
102 < over 45 identical command lines deleted here >
103     1,     2863: DTE  2863   128.077643 0.065865 00 ff 01 00 02 3b 3b 79 00
104     1,     2872: DTE  2872   128.176858 0.066080 00 ff 01 00 02 3b 3b 79 00
105     1,     2881: DTE  2881   128.276052 0.065859 00 ff 01 00 02 3b 3b 79 00
106
107 Stop
108     1,     2890: DTE  2890   128.385167 0.075811 00 ff 01 00 00 00 00 01 00
109     1,     2899: DTE  2899   128.615299 0.196803 00 ff 01 00 00 00 00 01 00
110     1,     2908: DTE  2908   128.845480 0.196879 00 ff 01 00 00 00 00 01 00
111
112 Down
113     1,     2917: DTE  2917   139.939314 11.060529 00 ff 01 00 10 3b 3b 87 00
114     1,     2926: DTE  2926   140.038476 0.065862 00 ff 01 00 10 3b 3b 87 00
115 < over 40 identical command lines deleted here >
116     1,     3295: DTE  3295   144.105820 0.065860 00 ff 01 00 10 3b 3b 87 00

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117      1,    3304: DTE 3304 144.205015 0.065862 00 ff 01 00 10 3b 3b 87 00
118      1,    3313: DTE 3313 144.304234 0.065916 00 ff 01 00 10 3b 3b 87 00
119      1,    3322: DTE 3322 144.403431 0.065865 00 ff 01 00 10 3b 3b 87 00
120      1,    3331: DTE 3331 144.502647 0.065916 00 ff 01 00 10 3b 3b 87 00
121      1,    3340: DTE 3340 144.601674 0.065697 00 ff 01 00 10 3b 3b 87 00
122
123 Stop
124      1,    3349: DTE 3349 144.710951 0.075782 00 ff 01 00 00 00 00 01 00
125      1,    3358: DTE 3358 144.940998 0.196704 00 ff 01 00 00 00 00 01 00
126      1,    3367: DTE 3367 145.171267 0.196918 00 ff 01 00 00 00 00 01 00
127
128 Left
129      1,    3376: DTE 3376 156.210543 11.005972 00 ff 01 00 04 3b 3b 7b 00
130      1,    3385: DTE 3385 156.309756 0.065912 00 ff 01 00 04 3b 3b 7b 00
131 < over 40 identical command lines deleted here >
132      1,    3763: DTE 3763 160.476242 0.065859 00 ff 01 00 04 3b 3b 7b 00
133      1,    3772: DTE 3772 160.575466 0.065908 00 ff 01 00 04 3b 3b 7b 00
134      1,    3781: DTE 3781 160.674656 0.066023 00 ff 01 00 04 3b 3b 7b 00
135      1,    3790: DTE 3790 160.773874 0.065913 00 ff 01 00 04 3b 3b 7b 00
136
137 Stop
138      1,    3799: DTE 3799 160.883014 0.075809 00 ff 01 00 00 00 00 01 00
139      1,    3808: DTE 3808 161.113146 0.196828 00 ff 01 00 00 00 00 01 00
140      1,    3817: DTE 3817 161.343304 0.196855 00 ff 01 00 00 00 00 01 00
141
142 Right
143      1,    3826: DTE 3826 173.603751 12.227119 00 ff 01 00 02 3b 3b 79 00
144      1,    3835: DTE 3835 173.702966 0.066076 00 ff 01 00 02 3b 3b 79 00
145      1,    3844: DTE 3844 173.802158 0.066028 00 ff 01 00 02 3b 3b 79 00
146      1,    3853: DTE 3853 173.901401 0.065937 00 ff 01 00 02 3b 3b 79 00
147      1,    3862: DTE 3862 174.000570 0.065862 00 ff 01 00 02 3b 3b 79 00
148      1,    3871: DTE 3871 174.099762 0.065861 00 ff 01 00 02 3b 3b 79 00
149      1,    3880: DTE 3880 174.198982 0.065913 00 ff 01 00 04 3b 3b 81 00
150      1,    3889: DTE 3889 174.298172 0.065858 00 ff 01 00 04 3b 3b 81 00
151      1,    3898: DTE 3898 174.397392 0.065912 00 ff 01 00 04 3b 3b 81 00
152 < over 30 identical command lines deleted here >
153      1,    4177: DTE 4177 177.472655 0.065863 00 ff 01 00 0a 3b 3b 81 00
154      1,    4186: DTE 4186 177.571857 0.065871 00 ff 01 00 0a 3b 3b 81 00
155      1,    4195: DTE 4195 177.671095 0.065942 00 ff 01 00 0a 3b 3b 81 00
156      1,    4204: DTE 4204 177.770261 0.065863 00 ff 01 00 0a 3b 3b 81 00
157      1,    4213: DTE 4213 177.869503 0.065915 00 ff 01 00 0a 3b 3b 81 00
158      1,    4222: DTE 4222 177.968671 0.065864 00 ff 01 00 02 3b 3b 79 00
159      1,    4231: DTE 4231 178.067696 0.065695 00 ff 01 00 02 3b 3b 79 00
160      1,    4240: DTE 4240 178.167082 0.065913 00 ff 01 00 02 3b 3b 79 00
161      1,    4249: DTE 4249 178.266274 0.065861 00 ff 01 00 02 3b 3b 79 00
162      1,    4258: DTE 4258 178.365519 0.065913 00 ff 01 00 02 3b 3b 79 00
163
164 Stop
165      1,    4267: DTE 4267 178.474636 0.075811 00 ff 01 00 00 00 00 01 00
166      1,    4276: DTE 4276 178.704768 0.196803 00 ff 01 00 00 00 00 01 00
167      1,    4285: DTE 4285 178.934924 0.196854 00 ff 01 00 00 00 00 01 00
168
169 Right
170      1,    4294: DTE 4294 190.228183 11.259931 00 ff 01 00 02 3b 3b 79 00
171      1,    4303: DTE 4303 190.327344 0.065860 00 ff 01 00 02 3b 3b 79 00
172      1,    4312: DTE 4312 190.426539 0.066028 00 ff 01 00 02 3b 3b 79 00
173      1,    4321: DTE 4321 190.525756 0.065912 00 ff 01 00 02 3b 3b 79 00
174      1,    4330: DTE 4330 190.624953 0.065863 00 ff 01 00 02 3b 3b 79 00
175 Up-Right
176      1,    4339: DTE 4339 190.724195 0.066080 00 ff 01 00 12 3b 3b 89 00
177      1,    4348: DTE 4348 190.823261 0.065761 00 ff 01 00 12 3b 3b 89 00
178 < over 30 identical command lines deleted here >
179      1,    4636: DTE 4636 193.997868 0.065914 00 ff 01 00 12 3b 3b 89 00
180      1,    4645: DTE 4645 194.097035 0.065862 00 ff 01 00 12 3b 3b 89 00
181      1,    4654: DTE 4654 194.196280 0.065915 00 ff 01 00 12 3b 3b 89 00
182      1,    4663: DTE 4663 194.295482 0.065898 00 ff 01 00 12 3b 3b 89 00
183      1,    4672: DTE 4672 194.394638 0.065861 00 ff 01 00 02 3b 3b 79 00
184
185 Stop
186      1,    4681: DTE 4681 194.503780 0.075811 00 ff 01 00 00 00 00 01 00
187      1,    4690: DTE 4690 194.733938 0.196854 00 ff 01 00 00 00 00 01 00
188      1,    4699: DTE 4699 194.964068 0.196779 00 ff 01 00 00 00 00 01 00

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189
190   Down
191   1,    4708: DTE 4708  206.305947 11.308575 00 ff 01 00 10 3b 3b 87 00
192   1,    4717: DTE 4717  206.405163 0.065912 00 ff 01 00 10 3b 3b 87 00
193   1,    4726: DTE 4726  206.504357 0.065862 00 ff 01 00 10 3b 3b 87 00
194   1,    4735: DTE 4735  206.603364 0.065702 00 ff 01 00 10 3b 3b 87 00
195   Left-Down
196   1,    4744: DTE 4744  206.702771 0.065916 00 ff 01 00 14 3b 3b 8b 00
197   1,    4753: DTE 4753  206.801961 0.065888 00 ff 01 00 14 3b 3b 8b 00
198   1,    4762: DTE 4762  206.901180 0.065914 00 ff 01 00 14 3b 3b 8b 00
199   1,    4771: DTE 4771  207.000372 0.065861 00 ff 01 00 14 3b 3b 8b 00
200   1,    4780: DTE 4780  207.099538 0.065861 00 ff 01 00 14 3b 3b 8b 00
201   1,    4789: DTE 4789  207.198782 0.065912 00 ff 01 00 14 3b 3b 8b 00
202   1,    4798: DTE 4798  207.297950 0.065861 00 ff 01 00 14 3b 3b 8b 00
203   1,    4807: DTE 4807  207.397197 0.065917 00 ff 01 00 14 3b 3b 8b 00
204   1,    4816: DTE 4816  207.496390 0.065865 00 ff 01 00 14 3b 3b 8b 00
205   Down
206   1,    4825: DTE 4825  207.595556 0.065864 00 ff 01 00 10 3b 3b 87 00
207   1,    4834: DTE 4834  207.694837 0.065951 00 ff 01 00 10 3b 3b 87 00
208 < over 25 identical command lines deleted here >
209   1,    5077: DTE 5077  210.373262 0.065910 00 ff 01 00 10 3b 3b 87 00
210   1,    5086: DTE 5086  210.472457 0.065861 00 ff 01 00 10 3b 3b 87 00
211   1,    5095: DTE 5095  210.571647 0.065887 00 ff 01 00 10 3b 3b 87 00
212   1,    5104: DTE 5104  210.670869 0.065912 00 ff 01 00 10 3b 3b 87 00
213   1,    5113: DTE 5113  210.770060 0.065820 00 ff 01 00 10 3b 3b 87 00
214   1,    5122: DTE 5122  210.869278 0.065913 00 ff 01 00 10 3b 3b 87 00
215
216   Stop
217   1,    5131: DTE 5131  210.978420 0.075808 00 ff 01 00 00 00 00 01 00
218   1,    5140: DTE 5140  211.208527 0.196802 00 ff 01 00 00 00 00 01 00
219   1,    5149: DTE 5149  211.438710 0.196854 00 ff 01 00 00 00 00 01 00
220
221   Up
222   1,    5158: DTE 5158  223.023608 11.551569 00 ff 01 00 08 3b 3b 7f 00
223   1,    5167: DTE 5167  223.122799 0.065851 00 ff 01 00 08 3b 3b 7f 00
224 < over 35 identical command lines deleted here >
225   1,    5500: DTE 5500  226.793294 0.065913 00 ff 01 00 08 3b 3b 7f 00
226   1,    5509: DTE 5509  226.892496 0.065868 00 ff 01 00 08 3b 3b 7f 00
227   1,    5518: DTE 5518  226.991710 0.065916 00 ff 01 00 08 3b 3b 7f 00
228   1,    5527: DTE 5527  227.090898 0.065858 00 ff 01 00 08 3b 3b 7f 00
229   1,    5536: DTE 5536  227.190091 0.065860 00 ff 01 00 08 3b 3b 7f 00
230   1,    5545: DTE 5545  227.289309 0.065912 00 ff 01 00 08 3b 3b 7f 00
231   1,    5554: DTE 5554  227.388501 0.065858 00 ff 01 00 08 3b 3b 7f 00
232
233   Stop
234   1,    5563: DTE 5563  227.497619 0.075811 00 ff 01 00 00 00 00 01 00
235   1,    5572: DTE 5572  227.727803 0.196851 00 ff 01 00 00 00 00 01 00
236   1,    5581: DTE 5581  227.957932 0.196827 00 ff 01 00 00 00 00 01 00
237
238   Right
239   1,    5590: DTE 5590  241.597313 13.606076 00 ff 01 00 02 3b 3b 79 00
240   Right-Tele
241   1,    5599: DTE 5599  241.695514 0.064871 00 ff 01 00 22 3b 3b 99 00
242   1,    5608: DTE 5608  241.794760 0.066105 00 ff 01 00 22 3b 3b 99 00
243 < over 35 identical command lines deleted here >
244   1,    5941: DTE 5941  245.465253 0.065852 00 ff 01 00 22 3b 3b 99 00
245   1,    5950: DTE 5950  245.564447 0.065860 00 ff 01 00 22 3b 3b 99 00
246   1,    5959: DTE 5959  245.663615 0.065860 00 ff 01 00 22 3b 3b 99 00
247   1,    5968: DTE 5968  245.762862 0.065916 00 ff 01 00 22 3b 3b 99 00
248   1,    5977: DTE 5977  245.861970 0.065807 00 ff 01 00 22 3b 3b 99 00
249   1,    5986: DTE 5986  245.961272 0.065950 00 ff 01 00 22 3b 3b 99 00
250   1,    5995: DTE 5995  246.060438 0.065862 00 ff 01 00 22 3b 3b 99 00
251   1,    6004: DTE 6004  246.159629 0.065860 00 ff 01 00 22 3b 3b 99 00
252   1,    6013: DTE 6013  246.258876 0.065915 00 ff 01 00 22 3b 3b 99 00
253
254   Stop
255   1,    6022: DTE 6022  246.367990 0.075810 00 ff 01 00 00 00 00 01 00
256   1,    6031: DTE 6031  246.598123 0.196802 00 ff 01 00 00 00 00 01 00
257   1,    6040: DTE 6040  246.828280 0.197020 00 ff 01 00 00 00 00 01 00
258
259   Right
260   1,    6049: DTE 6049  258.904221 12.042614 00 ff 01 00 02 3b 3b 79 00

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261
262 Stop
263   1,    6058: DTE 6058 258.960754 0.023233 00 ff 01 02 00 00 00 03 00
264
265 Noise
266   1,    6067: DTE 6067 259.003434 0.009375 fe
267
268 Right
269   1,    6068: DTE 6068 259.102633 0.099199 00 ff 01 00 02 3b 3b 79 00
270   1,    6077: DTE 6077 259.201846 0.065913 00 ff 01 00 02 3b 3b 79 00
271 < over 45 identical command lines deleted here >
272   1,    6500: DTE 6500 263.864401 0.065913 00 ff 01 00 02 3b 3b 79 00
273   1,    6509: DTE 6509 263.963569 0.065861 00 ff 01 00 02 3b 3b 79 00
274   1,    6518: DTE 6518 264.062760 0.065860 00 ff 01 00 02 3b 3b 79 00
275   1,    6527: DTE 6527 264.161980 0.065945 00 ff 01 00 02 3b 3b 79 00
276
277 Stop
278   1,    6536: DTE 6536 264.214582 0.019270 00 ff 01 00 00 00 00 01 00
279
280 Right
281   1,    6545: DTE 6545 264.261171 0.013281 00 ff 01 00 02 3b 3b 79 00
282
283 Stop
284   1,    6554: DTE 6554 264.370287 0.075810 00 ff 01 00 00 00 00 01 00
285   1,    6563: DTE 6563 264.600473 0.196854 00 ff 01 00 00 00 00 01 00
286   1,    6572: DTE 6572 264.830602 0.196801 00 ff 01 00 00 00 00 01 00
287
288 Open
289   1,    6581: DTE 6581 276.366762 11.502857 00 ff 01 02 00 00 00 03 00
290 Right
291   1,    6590: DTE 6590 276.415499 0.015387 00 ff 01 00 02 3b 3b 79 00
292 Right-Tele
293   1,    6599: DTE 6599 276.514693 0.065887 00 ff 01 00 22 3b 3b 99 00
294   1,    6608: DTE 6608 276.613923 0.065925 00 ff 01 00 22 3b 3b 99 00
295 < over 20 identical command lines deleted here >
296   1,    6806: DTE 6806 278.796398 0.065924 00 ff 01 00 22 3b 3b 99 00
297   1,    6815: DTE 6815 278.895553 0.065862 00 ff 01 00 22 3b 3b 99 00
298   1,    6824: DTE 6824 278.994745 0.065859 00 ff 01 00 22 3b 3b 99 00
299   1,    6833: DTE 6833 279.093990 0.065912 00 ff 01 00 22 3b 3b 99 00
300
301 Stop
302   1,    6842: DTE 6842 279.146568 0.019271 00 ff 01 00 00 00 00 01 00
303
304 Right-Tele
305   1,    6851: DTE 6851 279.193156 0.013282 00 ff 01 00 22 3b 3b 99 00
306   1,    6860: DTE 6860 279.292402 0.065912 00 ff 01 00 22 3b 3b 99 00
307 < over 15 identical command lines deleted here >
308   1,    7013: DTE 7013 280.978809 0.065861 00 ff 01 00 22 3b 3b 99 00
309   1,    7022: DTE 7022 281.078027 0.065912 00 ff 01 00 22 3b 3b 99 00
310 Tele
311   1,    7031: DTE 7031 281.177220 0.065860 00 ff 01 00 20 3b 3b 97 00
312
313 Stop
314   1,    7040: DTE 7040 281.286335 0.075799 00 ff 01 00 00 00 00 01 00
315   1,    7049: DTE 7049 281.516520 0.196854 00 ff 01 00 00 00 00 01 00
316   1,    7058: DTE 7058 281.746650 0.196827 00 ff 01 00 00 00 00 01 00
317
318 Open
319   1,    7067: DTE 7067 293.902957 12.123004 00 ff 01 02 00 00 00 03 00
320 Right
321   1,    7076: DTE 7076 293.950583 0.014323 00 ff 01 00 02 3b 3b 79 00
322 Right-Tele
323   1,    7085: DTE 7085 294.049777 0.065886 00 ff 01 00 22 3b 3b 99 00
324   1,    7094: DTE 7094 294.148996 0.065913 00 ff 01 00 22 3b 3b 99 00
325   1,    7103: DTE 7103 294.248188 0.065860 00 ff 01 00 22 3b 3b 99 00
326   1,    7112: DTE 7112 294.347356 0.065861 00 ff 01 00 22 3b 3b 99 00
327   1,    7121: DTE 7121 294.446600 0.065912 00 ff 01 00 22 3b 3b 99 00
328 Right-Tele_Far
329   1,    7130: DTE 7130 294.545766 0.065860 00 ff 01 00 a2 3b 3b 19 00
330   1,    7139: DTE 7139 294.645016 0.065917 00 ff 01 00 a2 3b 3b 19 00
331 < over 35 identical command lines deleted here >
332   1,    7472: DTE 7472 298.315340 0.065746 00 ff 01 00 a2 3b 3b 19 00

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333      1,    7481: DTE 7481  298.414702  0.065862 00 ff 01 00 a2 3b 3b 19 00
334      1,    7490: DTE 7490  298.513892  0.065859 00 ff 01 00 a2 3b 3b 19 00
335      1,    7499: DTE 7499  298.613114  0.065914 00 ff 01 00 a2 3b 3b 19 00
336      1,    7508: DTE 7508  298.712311  0.065867 00 ff 01 00 a2 3b 3b 19 00
337      1,    7517: DTE 7517  298.811363  0.065754 00 ff 01 00 a2 3b 3b 19 00
338
339 Noise
340      1,    7526: DTE 7526  298.850221  0.005366 00 ff
341
342 Right-Tele_far
343      1,    7528: DTE 7528  298.910717  0.056331 00 ff 01 00 a2 3b 3b 19 00
344
345 Stop
346      1,    7537: DTE 7537  299.019833  0.075811 00 ff 01 00 00 00 00 01 00
347      1,    7546: DTE 7546  299.249964  0.196802 00 ff 01 00 00 00 00 01 00
348      1,    7555: DTE 7555  299.480146  0.196852 00 ff 01 00 00 00 00 01 00
349
350 Tele
351      1,    7564: DTE 7564  311.323957  11.810507 00 ff 01 00 20 3b 3b 97 00
352
353 Noise
354      1,    7573: DTE 7573  311.365617  0.008333 f0
355 Right-Tele
356      1,    7574: DTE 7574  311.423143  0.057526 00 ff 01 00 22 3b 3b 99 00
357      1,    7583: DTE 7583  311.522360  0.065910 00 ff 01 00 22 3b 3b 99 00
358 Right-Tele-Far-Up
359      1,    7592: DTE 7592  311.621556  0.065862 00 ff 01 00 aa 3b 3b 21 00
360      1,    7601: DTE 7601  311.720798  0.065911 00 ff 01 00 aa 3b 3b 21 00
361      1,    7610: DTE 7610  311.819967  0.065862 00 ff 01 00 aa 3b 3b 21 00
362 Right-Tele-Up
363      1,    7619: DTE 7619  311.919158  0.065860 00 ff 01 00 2a 3b 3b a1 00
364      1,    7628: DTE 7628  312.018378  0.065914 00 ff 01 00 2a 3b 3b a1 00
365      1,    7637: DTE 7637  312.117576  0.065866 00 ff 01 00 2a 3b 3b a1 00
366      1,    7646: DTE 7646  312.216815  0.065939 00 ff 01 00 2a 3b 3b a1 00
367      1,    7655: DTE 7655  312.315981  0.065860 00 ff 01 00 2a 3b 3b a1 00
368 Right-Tele-Far-Up
369      1,    7664: DTE 7664  312.416164  0.066850 00 ff 01 00 aa 3b 3b 21 00
370      1,    7673: DTE 7673  312.515383  0.065912 00 ff 01 00 aa 3b 3b 21 00
371 < over 30 identical command lines deleted here >
372      1,    7961: DTE 7961  315.689890  0.065912 00 ff 01 00 aa 3b 3b 21 00
373      1,    7970: DTE 7970  315.789058  0.065862 00 ff 01 00 aa 3b 3b 21 00
374      1,    7979: DTE 7979  315.888305  0.065917 00 ff 01 00 aa 3b 3b 21 00
375      1,    7988: DTE 7988  315.987471  0.065864 00 ff 01 00 aa 3b 3b 21 00
376
377 Noise
378      1,    7997: DTE 7997  316.030123  0.009417 fe
379
380 Tele-Far
381      1,    7998: DTE 7998  316.090681  0.060558 00 ff 01 00 a0 3b 3b 17 00
382
383 Stop
384      1,    8007: DTE 8007  316.199736  0.075733 00 ff 01 00 00 00 00 01 00
385      1,    8016: DTE 8016  316.429918  0.196853 00 ff 01 00 00 00 00 01 00
386      1,    8025: DTE 8025  316.660101  0.196853 00 ff 01 00 00 00 00 01 00
387
388 # There were a total of 8033 bytes transferred
389
390 # There were a total of 0 DCE bytes transferred
391 # The first DCE byte came in at 0.000000 seconds from the start of data collection
392 # The last DCE byte was at 0.000000 seconds from the start of data collection
393
394 # There were a total of 8033 DTE bytes transferred
395 # The first DTE byte came in at 0.000000 seconds from the start of data collection
396 # The last DTE byte was at 316.693403 seconds from the start of data collection
397

```

3.3 D Protocol commands sent by a SecuriTEST PRO with an Esprit connected

In this partial data capture⁸, note that many commands are accepted, but that many are not and that the SecuriTEST PRO seems to get “confused” when it gets replies. When it is confused, it starts to send illegal commands.

Due to the speed of the “resends”, the data gets interleaved with commands occurring at the same time as replies are being sent.

```

1  # $ Header: d:/Binder0/RCS/MsQ.1,v 1.1 2008-09-12 14:26:31-07 Hamilton Exp Hamilton $
2  # $Header: d:/Binder7/SecuriTEST/RCS/09APR27M.d,v 1.3 2009-05-01 07:12:53-07 Hamilton Exp Hamilton $
3  # Thu Apr 30 09:16:11 2009
4
5  # D Protocol, as generated by a SecuriTEST PRO, with an Esprit connected
6
7  # DCE = The SecuriTEST PRO
8  # DTE = The Esprit
9
10 # FTS capture buffer (4/27/2009 10:46:35 AM)
11 # Event 1 (4/27/2009 10:40:36.108782 AM) through
12 # Event 8,977 (4/27/2009 10:45:57.378308 AM)
13
14
15      1,        1: DCE    1    0.000000  0.000000 00 ff 01 00 00 00 00 01 00
16
17      2,        1: DTE    10   0.033794  0.000472 ff
18      2,        2: DTE    11   0.038127  0.004333 01
19
20      2,        10: DCE   12   0.041656  0.004333 f0
21
22      3,        3: DTE    13   0.042295  0.004333 00
23      3,        4: DTE    14   0.046461  0.004333 01
24
25      3,        11: DCE   15   0.271764  0.225303 00
26      3,        12: DCE   16   0.275926  0.004162 ff
27      3,        13: DCE   17   0.280093  0.004167 01
28      3,        14: DCE   18   0.284307  0.004214 00
29      3,        15: DCE   19   0.288427  0.004120 00
30      3,        16: DCE   20   0.292593  0.004166 00
31      3,        17: DCE   21   0.296597  0.004004 00
32      3,        18: DCE   22   0.300939  0.004342 01
33      3,        19: DCE   23   0.305092  0.004153 00
34
35      4,        5: DTE    24   0.307295  0.002203 ff 01 00 01
36
37      4,        20: DCE   28   0.501946  0.004168 00 ff 01 00 00 00 00 01 00
38
39      5,        9: DTE    37   0.536045  0.000770 ff
40
41      5,        29: DCE   38   0.539440  0.000770 00
42
43      6,        10: DTE   39   0.540211  0.000770 01
44
45      6,        30: DCE   40   0.543609  0.003398 ff
46
47      7,        11: DTE   41   0.544386  0.000777 00
48      7,        12: DTE   42   0.548544  0.004158 01
49
50      7,        31: DCE   43   17.267214  0.004158 00 ff 01 00 80 3b 3b f7 00
51
52      8,        13: DTE   52   17.303915  0.003374 ff 01 00 f7
53
54      8,        40: DCE   56   17.330723  0.004167 00
55      8,        41: DCE   57   17.334888  0.004165 7f
56      8,        42: DCE   58   17.339057  0.004169 11
57      8,        43: DCE   59   17.366401  0.027344 00 ff 01 00 80 3b 3b f7 00

```

⁸It was too much work to reformat the full data capture by hand. For most of this type of work, I have automated analysis software, but this data is so “mixed up” that capture data had to be “hand edited”.

```

58
59      9,      17: DTE   68   17.428501  0.028793 ff 01 00 f7
60
61      9,      52: DCE   72   17.454706  0.004166 00
62      9,      53: DCE   73   17.458755  0.004049 7f
63      9,      54: DCE   74   17.463014  0.004259 11
64      9,      55: DCE   75   17.478483  0.015469 00
65      9,      56: DCE   76   17.482651  0.004168 ff
66      9,      57: DCE   77   17.486816  0.004165 01
67      9,      58: DCE   78   17.577731  0.090915 00 ff 01 00 80 3b 3b f7 00
68      9,      67: DCE   87   17.676898  0.065864 00 ff 01 00 80 3b 3b f7 00
69
70      10,     21: DTE   96   17.713914  0.003686 ff 01 00 f7
71
72      10,     76: DCE   100  17.740489  0.004165 00
73      10,     77: DCE   101  17.744628  0.004139 7f
74      10,     78: DCE   102  17.748796  0.004168 11
75      10,     79: DCE   103  17.776140  0.027344 00
76      10,     80: DCE   104  17.780307  0.004167 ff
77      10,     81: DCE   105  17.875336  0.095029 00 ff 01 00 80 3b 3b f7 00
78      10,     90: DCE   114  17.974509  0.065869 00 ff 01 00 80 3b 3b f7 00
79
80      11,     25: DTE   123  18.009797  0.001966 ff 01 00 f7
81
82      11,     99: DCE   127  18.036035  0.004170 00
83      11,    100: DCE   128  18.040203  0.004168 7f
84      11,    101: DCE   129  18.044368  0.004165 11
85      11,    102: DCE   130  18.073745  0.029377 c0
86      11,    103: DCE   131  18.172913  0.099168 00 ff 01 00 80 3b 3b f7 00
87
88      12,     29: DTE   140  18.208498  0.002253 ff 01 00 f7
89
90      12,    112: DCE   144  18.235441  0.004167 00
91      12,    113: DCE   145  18.239604  0.004163 7f
92      12,    114: DCE   146  18.243772  0.004168 11
93      12,    115: DCE   147  18.272156  0.028384 00
94      12,    116: DCE   148  18.371326  0.099170 00 ff 01 00 80 3b 3b f7 00
95
96      13,     33: DTE   157  18.405998  0.001343 ff 01 00 f7
97
98      13,    125: DCE   161  18.432940  0.004168 00
99      13,    126: DCE   162  18.437097  0.004157 7f
100     13,    127: DCE   163  18.441245  0.004148 11
101     13,    128: DCE   164  18.470348  0.029103 c0
102     13,    129: DCE   165  18.569762  0.099414 00 ff 01 00 80 3b 3b f7 00
103
104     14,     37: DTE   174  18.604749  0.001680 ff 01 00 f7
105
106     14,    138: DCE   178  18.631132  0.004167 00
107     14,    139: DCE   179  18.635301  0.004169 7f
108     14,    140: DCE   180  18.639464  0.004163 11
109     14,    141: DCE   181  18.668929  0.029465 c0
110     14,    142: DCE   182  18.768174  0.099245 00 ff 01 00 80 3b 3b f7 00
111
112     15,     41: DTE   191  18.803497  0.002019 ff 01 00 f7
113
114     15,    151: DCE   195  18.829707  0.004166 00
115     15,    152: DCE   196  18.833877  0.004170 7f
116     15,    153: DCE   197  18.838041  0.004164 11
117     15,    154: DCE   198  18.867338  0.029297 c0
118     15,    155: DCE   199  18.966534  0.099196 00 ff 01 00 80 3b 3b f7 00
119
120     16,     45: DTE   208  19.003499  0.003661 ff 01 00 f7
121
122     16,    164: DCE   212  19.030102  0.004168 00
123     16,    165: DCE   213  19.034269  0.004167 7f
124     16,    166: DCE   214  19.038431  0.004162 11
125     16,    167: DCE   215  19.065776  0.027345 00
126     16,    168: DCE   216  19.069917  0.004141 ff
127     16,    169: DCE   217  19.164945  0.095028 00 ff 01 00 80 3b 3b f7 00
128     16,    178: DCE   226  19.264189  0.065915 00 ff 01 00 80 3b 3b f7 00
129

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130   17,      49: DTE  235   19.298915  0.001420 ff 01 00 f7
131
132   17,      187: DCE  239   19.325723  0.004168 00
133   17,      188: DCE  240   19.329889  0.004166 7f
134   17,      189: DCE  241   19.334057  0.004168 11
135   17,      190: DCE  242   19.363354  0.029297 c0
136   17,      191: DCE  243   19.462551  0.099197 00 ff 01 00 80 3b 3b f7 00
137
138   18,      53: DTE  252   19.498080  0.002226 ff 01 00 f7
139
140   18,      200: DCE  256   19.525125  0.004167 00
141   18,      201: DCE  257   19.529290  0.004165 7f
142   18,      202: DCE  258   19.533459  0.004169 11
143   18,      203: DCE  259   19.561777  0.028318 00
144   18,      204: DCE  260   19.660963  0.099186 00 ff 01 00 80 3b 3b f7 00
145
146   19,      57: DTE  269   19.697665  0.003374 ff 01 00 f7
147
148   19,      213: DCE  273   19.724475  0.004166 00
149   19,      214: DCE  274   19.728640  0.004165 7f
150   19,      215: DCE  275   19.732807  0.004167 11
151   19,      216: DCE  276   19.760205  0.027398 00
152   19,      217: DCE  277   19.764369  0.004164 ff
153   19,      218: DCE  278   19.859372  0.095003 00 ff 01 00 80 3b 3b f7 00
154   19,      227: DCE  287   19.958565  0.065862 00 ff 01 00 80 3b 3b f7 00
155
156   20,      61: DTE  296   19.993081  0.001211 ff 01 00 f7
157
158   20,      236: DCE  300   20.020152  0.004165 00
159   20,      237: DCE  301   20.024321  0.004169 7f
160   20,      238: DCE  302   20.028485  0.004164 11
161   20,      239: DCE  303   20.057782  0.029297 c0
162   20,      240: DCE  304   20.156976  0.099194 00 ff 01 00 80 3b 3b f7 00
163
164   21,      65: DTE  313   20.192676  0.002394 ff 01 00 f7
165
166   21,      249: DCE  317   20.219502  0.004005 00
167   21,      250: DCE  318   20.223666  0.004164 7f
168   21,      251: DCE  319   20.227834  0.004168 11
169   21,      252: DCE  320   20.256219  0.028385 00
170   21,      253: DCE  321   20.355452  0.099233 00 ff 01 00 80 3b 3b f7 00
171
172   22,      69: DTE  330   20.394747  0.005971 ff 01 00 f7
173
174   22,      262: DCE  334   20.421826  0.004262 00
175   22,      263: DCE  335   20.426040  0.004214 7f
176   22,      264: DCE  336   20.430202  0.004162 11
177   22,      265: DCE  337   20.454580  0.024378 00
178   22,      266: DCE  338   20.458744  0.004164 ff
179   22,      267: DCE  339   20.553632  0.094888 00 ff 01 00 80 3b 3b f7 00
180   22,      276: DCE  348   20.652999  0.065867 00 ff 01 00 80 3b 3b f7 00
181
182   23,      73: DTE  357   20.692249  0.005951 ff 01 00 f7
183
184   23,      285: DCE  361   20.719370  0.004167 00
185   23,      286: DCE  362   20.723450  0.004080 7f
186   23,      287: DCE  363   20.727703  0.004253 11
187   23,      288: DCE  364   20.752210  0.024507 00
188   23,      289: DCE  365   20.756377  0.004167 ff
189   23,      290: DCE  366   20.851405  0.095028 00 ff 01 00 80 3b 3b f7 00
190   23,      299: DCE  375   20.950594  0.065859 00 ff 01 00 80 3b 3b f7 00
191
192   24,      77: DTE  384   20.991832  0.008007 ff 01 00 f7
193
194   24,      308: DCE  388   21.018120  0.004168 00
195   24,      309: DCE  389   21.022248  0.004128 7f
196   24,      310: DCE  390   21.026428  0.004180 11
197   24,      311: DCE  391   21.049813  0.023385 00
198   24,      312: DCE  392   21.053925  0.004112 ff
199   24,      313: DCE  393   21.058145  0.004220 ff
200   24,      314: DCE  394   21.149006  0.090861 00 ff 01 00 80 3b 3b f7 00
201   24,      323: DCE  403   21.248226  0.065913 00 ff 01 00 80 3b 3b f7 00

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202
203 25,     81: DTE 412 21.283499 0.001942 ff 01 00 f7
204
205 25,     332: DCE 416 21.309812 0.004167 00
206 25,     333: DCE 417 21.313978 0.004166 7f
207 25,     334: DCE 418 21.318146 0.004168 11
208 25,     335: DCE 419 21.347418 0.029272 c0
209 25,     336: DCE 420 21.446588 0.099170 00 ff 01 00 80 3b 3b f7 00
210
211 26,     85: DTE 429 21.483082 0.003167 ff 01 00 f7
212
213 26,     345: DCE 433 21.510013 0.004166 00
214 26,     346: DCE 434 21.514318 0.004305 7f
215 26,     347: DCE 435 21.518485 0.004167 11
216 26,     348: DCE 436 21.545830 0.027345 00
217 26,     349: DCE 437 21.549995 0.004165 ff
218 26,     350: DCE 438 21.644859 0.094864 00 ff 01 00 80 3b 3b f7 00
219 26,     359: DCE 447 21.744241 0.065913 00 ff 01 00 80 3b 3b f7 00
220
221 27,     89: DTE 456 21.778916 0.001342 ff 01 00 f7
222
223 27,     368: DCE 460 21.805776 0.004167 00
224 27,     369: DCE 461 21.809943 0.004167 7f
225 27,     370: DCE 462 21.814109 0.004166 11
226 27,     371: DCE 463 21.843434 0.029325 c0
227 27,     372: DCE 464 21.953539 0.110105 00 ff 01 00 00 00 00 01 00
228
229 28,     93: DTE 473 21.988916 0.002045 ff 01 00 01
230
231 28,     381: DCE 477 22.183723 0.004167 00 ff 01 00 00 00 00 01 00
232
233 29,     97: DTE 486 22.219332 0.002305 ff 01 00 01
234
235 29,     390: DCE 490 22.413852 0.004168 00 ff 01 00 00 00 00 01 00
236
237 30,     101: DTE 499 22.451001 0.003843 ff
238
239 30,     399: DCE 500 22.451323 0.003843 00
240
241 31,     102: DTE 501 22.455166 0.003843 01
242
243 31,     400: DCE 502 22.455489 0.000323 ff
244
245 32,     103: DTE 503 22.459333 0.003844 00
246 32,     104: DTE 504 22.463500 0.004167 01
247
248 32,     401: DCE 505 33.628728 0.004167 00 ff 01 01 00 3b 3b 78 00
249
250 33,     105: DTE 514 33.663283 0.001387 ff 01 00 78
251
252 33,     410: DCE 518 33.694478 0.004155 00
253 33,     411: DCE 519 33.698645 0.004167 7f
254 33,     412: DCE 520 33.702811 0.004166 0f
255 33,     413: DCE 521 33.706977 0.004166 00
256 33,     414: DCE 522 33.728905 0.021928 00
257 33,     415: DCE 523 33.733072 0.004167 ff
258 33,     416: DCE 524 33.737238 0.004166 f9
259 33,     417: DCE 525 33.828126 0.090888 00 ff 01 01 00 3b 3b 78 00
260 33,     426: DCE 534 33.927317 0.065861 00 ff 01 01 00 3b 3b 78 00
261
262 34,     109: DTE 543 33.968452 0.007828 ff 01 00 78
263
264 34,     435: DCE 547 33.998855 0.004167 00
265 34,     436: DCE 548 34.003020 0.004165 7f
266 34,     437: DCE 549 34.007186 0.004166 0f
267 34,     438: DCE 550 34.011353 0.004167 00
268 34,     439: DCE 551 34.031396 0.020043 00
269 34,     440: DCE 552 34.035650 0.004254 ff
270 34,     441: DCE 553 34.039818 0.004168 01
271 34,     442: DCE 554 34.130677 0.090859 00 ff 01 01 00 3b 3b 78 00
272 34,     451: DCE 563 34.229923 0.065914 00 ff 01 01 00 3b 3b 78 00
273

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274 35,    113: DTE  572  34.265534  0.002473 ff 01 00 78
275
276 35,    460: DCE  576  34.296561  0.004165 00
277 35,    461: DCE  577  34.300727  0.004166 7f
278 35,    462: DCE  578  34.304869  0.004142 0f
279 35,    463: DCE  579  34.309036  0.004167 00
280 35,    464: DCE  580  34.329087  0.020051 00
281 35,    465: DCE  581  34.333271  0.004184 ff
282 35,    466: DCE  582  34.337420  0.004149 01
283 35,    467: DCE  583  34.428284  0.090864 00 ff 01 01 00 3b 3b 78 00
284 35,    476: DCE  592  34.527500  0.065912 00 ff 01 01 00 3b 3b 78 00
285
286 36,    117: DTE  601  34.565951  0.005118 ff 01 00 78
287
288 36,    485: DCE  605  34.598776  0.004332 00
289 36,    486: DCE  606  34.602941  0.004165 7f
290 36,    487: DCE  607  34.607109  0.004168 0f
291 36,    488: DCE  608  34.611275  0.004166 00
292 36,    489: DCE  609  34.631640  0.020365 00
293 36,    490: DCE  610  34.635806  0.004166 ff
294 36,    491: DCE  611  34.639972  0.004166 01
295 36,    492: DCE  612  34.730864  0.090892 00 ff 01 01 00 3b 3b 78 00
296 36,    501: DCE  621  34.830054  0.065862 00 ff 01 01 00 3b 3b 78 00
297
298 37,    121: DTE  630  34.865951  0.002592 ff 01 00 78
299
300 37,    510: DCE  634  34.896692  0.004167 00
301 37,    511: DCE  635  34.900859  0.004167 7f
302 37,    512: DCE  636  34.905026  0.004167 0f
303 37,    513: DCE  637  34.909192  0.004166 00
304 37,    514: DCE  638  34.929296  0.020104 00
305 37,    515: DCE  639  34.933436  0.004140 ff
306 37,    516: DCE  640  34.937605  0.004169 81
307 37,    517: DCE  641  35.028466  0.090861 00 ff 01 01 00 3b 3b 78 00
308 37,    526: DCE  650  35.127657  0.065847 00 ff 01 01 00 3b 3b 78 00
309
310 38,    125: DTE  659  35.166368  0.005406 ff 01 00 78
311
312 38,    535: DCE  663  35.198769  0.004333 00
313 38,    536: DCE  664  35.202936  0.004167 7f
314 38,    537: DCE  665  35.207103  0.004167 0f
315 38,    538: DCE  666  35.211443  0.004340 00
316 38,    539: DCE  667  35.231822  0.020379 00
317 38,    540: DCE  668  35.235989  0.004167 ff
318 38,    541: DCE  669  35.240157  0.004168 01
319 38,    542: DCE  670  35.331018  0.090861 00 ff 01 01 00 3b 3b 78 00
320 38,    551: DCE  679  35.430235  0.065902 00 ff 01 01 00 3b 3b 78 00
321
322 39,    129: DTE  688  35.467873  0.004306 ff 01 00 78
323
324 39,    560: DCE  692  35.498816  0.002553 00
325 39,    561: DCE  693  35.502969  0.004153 7f
326 39,    562: DCE  694  35.507135  0.004166 0f
327 39,    563: DCE  695  35.511301  0.004166 00
328 39,    564: DCE  696  35.531438  0.020137 00
329 39,    565: DCE  697  35.535573  0.004135 ff
330 39,    566: DCE  698  35.539738  0.004165 01
331 39,    567: DCE  699  35.630655  0.090917 00 ff 01 01 00 3b 3b 78 00
332 39,    576: DCE  708  35.729822  0.066030 00 ff 01 01 00 3b 3b 78 00
333
334 40,    133: DTE  717  35.768036  0.004885 ff 01 00 78
335
336 40,    585: DCE  721  35.799306  0.004167 00
337 40,    586: DCE  722  35.803594  0.004288 7f
338 40,    587: DCE  723  35.807759  0.004165 0f
339 40,    588: DCE  724  35.811926  0.004167 00
340 40,    589: DCE  725  35.832030  0.020104 00
341 40,    590: DCE  726  35.836198  0.004168 ff
342 40,    591: DCE  727  35.840364  0.004166 81
343 40,    592: DCE  728  35.931200  0.090836 00 ff 01 01 00 3b 3b 78 00
344 40,    601: DCE  737  36.030448  0.065918 00 ff 01 01 00 3b 3b 78 00
345

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346 41, 137: DTE 746 36.067618 0.003867 ff 01 00 78
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348 41, 610: DCE 750 36.099010 0.004167 00
349 41, 611: DCE 751 36.103179 0.004169 7f
350 41, 612: DCE 752 36.107343 0.004164 0f
351 41, 613: DCE 753 36.111510 0.004167 00
352 41, 614: DCE 754 36.131589 0.020079 00
353 41, 615: DCE 755 36.135613 0.004024 ff
354 41, 616: DCE 756 36.139921 0.004308 01
355 41, 617: DCE 757 36.230783 0.090862 00 ff 01 01 00 3b 3b 78 00
356 41, 626: DCE 766 36.330000 0.065912 00 ff 01 01 00 3b 3b 78 00
357
358 42, 141: DTE 775 36.366368 0.003036 ff 01 00 78
359
360 42, 635: DCE 779 36.397604 0.004164 00
361 42, 636: DCE 780 36.401745 0.004141 7f
362 42, 637: DCE 781 36.405921 0.004176 0f
363 42, 638: DCE 782 36.410079 0.004158 00
364 42, 639: DCE 783 36.430182 0.020103 00
365 42, 640: DCE 784 36.434349 0.004167 ff
366 42, 641: DCE 785 36.438515 0.004166 01
367 42, 642: DCE 786 36.529430 0.090915 00 ff 01 01 00 3b 3b 78 00
368 42, 651: DCE 795 36.628595 0.065861 00 ff 01 01 00 3b 3b 78 00
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370 43, 145: DTE 804 36.666619 0.004857 ff 01 00 78
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372 43, 660: DCE 808 36.697162 0.004339 00
373 43, 661: DCE 809 36.701327 0.004165 7f
374 43, 662: DCE 810 36.705494 0.004167 0f
375 43, 663: DCE 811 36.709661 0.004167 00
376 43, 664: DCE 812 36.729818 0.020157 00
377 43, 665: DCE 813 36.733982 0.004164 ff
378 43, 666: DCE 814 36.738151 0.004169 81
379 43, 667: DCE 815 36.828987 0.090836 00 ff 01 01 00 3b 3b 78 00
380 43, 676: DCE 824 36.928177 0.065859 00 ff 01 01 00 3b 3b 78 00
381
382 44, 149: DTE 833 36.963451 0.001966 ff 01 00 78
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384 44, 685: DCE 837 36.994765 0.004167 00
385 44, 686: DCE 838 36.998931 0.004166 7f
386 44, 687: DCE 839 37.003098 0.004167 0f
387 44, 688: DCE 840 37.007265 0.004167 00
388 44, 689: DCE 841 37.027421 0.020156 00
389 44, 690: DCE 842 37.031563 0.004142 ff
390 44, 691: DCE 843 37.035730 0.004167 01
391 44, 692: DCE 844 37.126591 0.090861 00 ff 01 01 00 3b 3b 78 00
392 44, 701: DCE 853 37.225837 0.065917 00 ff 01 01 00 3b 3b 78 00
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394 45, 153: DTE 862 37.263451 0.004312 ff 01 00 78
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396 45, 710: DCE 866 37.294402 0.004165 00
397 45, 711: DCE 867 37.298567 0.004165 7f
398 45, 712: DCE 868 37.302737 0.004170 0f
399 45, 713: DCE 869 37.306901 0.004164 00
400 45, 714: DCE 870 37.326977 0.020076 00
401 45, 715: DCE 871 37.331147 0.004170 ff
402 45, 716: DCE 872 37.335313 0.004166 01
403 45, 717: DCE 873 37.426226 0.090913 00 ff 01 01 00 3b 3b 78 00
404 45, 726: DCE 882 37.525391 0.065860 00 ff 01 01 00 3b 3b 78 00
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406 46, 157: DTE 891 37.563451 0.004726 ff 01 00 78
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408 46, 735: DCE 895 37.593959 0.004165 00
409 46, 736: DCE 896 37.598125 0.004166 7f
410 46, 737: DCE 897 37.602291 0.004166 0f
411 46, 738: DCE 898 37.606458 0.004167 00
412 46, 739: DCE 899 37.626564 0.020106 00
413 46, 740: DCE 900 37.630730 0.004166 ff
414 46, 741: DCE 901 37.634897 0.004167 01
415 46, 742: DCE 902 37.725812 0.090915 00 ff 01 01 00 3b 3b 78 00
416 46, 751: DCE 911 37.824977 0.065862 00 ff 01 01 00 3b 3b 78 00
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418 47,    161: DTE  920   37.863453  0.005107 ff 01 00 78
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420 47,    760: DCE  924   37.894584  0.004165 00
421 47,    761: DCE  925   37.898750  0.004166 7f
422 47,    762: DCE  926   37.902918  0.004168 0f
423 47,    763: DCE  927   37.907084  0.004166 00
424 47,    764: DCE  928   37.927190  0.020106 00
425 47,    765: DCE  929   37.931354  0.004164 ff
426 47,    766: DCE  930   37.935522  0.004168 81
427 47,    767: DCE  931   38.026359  0.090837 00 ff 01 01 00 3b 3b 78 00
428 47,    776: DCE  940   38.135497  0.075810 00 ff 01 00 00 00 00 01 00
429
430 48,    165: DTE  949   38.171786  0.003151 ff 01 00 01
431
432 48,    785: DCE  953   38.365654  0.004168 00 ff 01 00 00 00 00 01 00
433
434 49,    169: DTE  962   38.401203  0.002336 ff 01 00 01
435
436 49,    794: DCE  966   38.595786  0.004169 00 ff 01 00 00 00 00 01 00
437
438 50,    173: DTE  975   38.633035  0.003911 ff
439
440 50,    803: DCE  976   38.633315  0.003911 00
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442 51,    174: DTE  977   38.637201  0.003911 01
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444 51,    804: DCE  978   38.637482  0.000281 ff
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446 52,    175: DTE  979   38.641368  0.003886 00
447 52,    176: DTE  980   38.645535  0.004167 01
448
449 52,    805: DCE  981   50.896846  0.004167 00 ff 01 00 20 3b 3b 97 00
450
451 53,    177: DTE  990   50.931740  0.001476 ff 01 00 97
452
453 53,    814: DCE  994   50.958467  0.004168 00
454 53,    815: DCE  995   50.962633  0.004166 7f
455 53,    816: DCE  996   50.966811  0.004178 d1
456 53,    817: DCE  997   50.996176  0.029365 c0
457 53,    818: DCE  998   51.095346  0.099170 00 ff 01 00 20 3b 3b 97 00
458
459 54,    181: DTE  1007  51.157987  0.029312 ff 01 00 97
460
461 54,    827: DCE  1011  51.184691  0.004165 00
462 54,    828: DCE  1012  51.188858  0.004167 7f
463 54,    829: DCE  1013  51.193025  0.004167 d1
464 54,    830: DCE  1014  51.213364  0.020339 00
465 54,    831: DCE  1015  51.217363  0.003999 ff
466 54,    832: DCE  1016  51.221697  0.004334 01
467 54,    833: DCE  1017  51.312611  0.090914 00 ff 01 00 20 3b 3b 97 00
468 54,    842: DCE  1026  51.411803  0.065863 00 ff 01 00 20 3b 3b 97 00
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470 55,    185: DTE  1035  51.448403  0.003293 ff 01 00 97
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472 55,    851: DCE  1039  51.475374  0.004167 00
473 55,    852: DCE  1040  51.479536  0.004162 7f
474 55,    853: DCE  1041  51.483701  0.004165 d1
475 55,    854: DCE  1042  51.511020  0.027319 00
476 55,    855: DCE  1043  51.515186  0.004166 ff
477 55,    856: DCE  1044  51.610216  0.095030 00 ff 01 00 20 3b 3b 97 00
478 55,    865: DCE  1053  51.709383  0.065865 00 ff 01 00 20 3b 3b 97 00
479
480 56,    189: DTE  1062  51.749654  0.006941 ff 01 00 97
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482 56,    874: DCE  1066  51.775967  0.004156 00
483 56,    875: DCE  1067  51.780135  0.004168 7f
484 56,    876: DCE  1068  51.784301  0.004166 d1
485 56,    877: DCE  1069  51.808624  0.024323 00
486 56,    878: DCE  1070  51.812792  0.004168 ff
487 56,    879: DCE  1071  51.907818  0.095026 00 ff 01 00 20 3b 3b 97 00
488 56,    888: DCE  1080  52.007036  0.065912 00 ff 01 00 20 3b 3b 97 00
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490      57,     193: DTE 1089   52.095904  0.055536 ff
491      57,     194: DTE 1090   52.100069  0.004165 01
492      57,     195: DTE 1091   52.104237  0.004168 00
493
494      57,     897: DCE 1092   52.106229  0.004168 00
495
496      58,     196: DTE 1093   52.108413  0.004168 97
497
498      58,     898: DCE 1094   52.110395  0.001982 ff 01 00 20 3b 3b 97 00
499      59,     197: DTE 1102   52.142153  0.002618 ff
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501      59,     906: DCE 1103   52.143702  0.002618 00
502
503      60,     198: DTE 1104   52.146320  0.002618 01
504
505      60,     907: DCE 1105   52.147869  0.001549 ff
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507      61,     199: DTE 1106   52.150487  0.002618 00
508      61,     200: DTE 1107   52.154652  0.004165 97
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510      61,     908: DCE 1108   52.205396  0.004165 00 ff 01 00 20 3b 3b 97 00
511      61,     917: DCE 1117   52.304641  0.065904 00 ff 01 00 20 3b 3b 97 00
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513      62,     201: DTE 1126   52.364653  0.026707 ff 01 00 97
514
515      62,     926: DCE 1130   52.390969  0.004168 00
516      62,     927: DCE 1131   52.395136  0.004167 7f
517      62,     928: DCE 1132   52.399135  0.003999 d1
518      62,     929: DCE 1133   52.419692  0.020557 00
519      62,     930: DCE 1134   52.423859  0.004167 ff
520      62,     931: DCE 1135   52.428024  0.004165 01
521      62,     932: DCE 1136   52.518890  0.090866 00 ff 01 00 20 3b 3b 97 00
522      62,     941: DCE 1145   52.618105  0.065913 00 ff 01 00 20 3b 3b 97 00
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524      63,     205: DTE 1154   52.660072  0.008636 ff 01 00 97
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526      63,     950: DCE 1158   52.686406  0.004167 00
527      63,     951: DCE 1159   52.690568  0.004162 7f
528      63,     952: DCE 1160   52.694734  0.004166 d1
529      63,     953: DCE 1161   52.717297  0.022563 00
530      63,     954: DCE 1162   52.721463  0.004166 ff
531      63,     955: DCE 1163   52.725632  0.004169 f9
532      63,     956: DCE 1164   52.816543  0.090911 00 ff 01 00 20 3b 3b 97 00
533      63,     965: DCE 1173   52.915709  0.065811 00 ff 01 00 20 3b 3b 97 00
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535      64,     209: DTE 1182   52.955903  0.006861 ff 01 00 97
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537      64,     974: DCE 1186   52.982193  0.004167 00
538      64,     975: DCE 1187   52.986358  0.004165 7f
539      64,     976: DCE 1188   52.990525  0.004167 d1
540      64,     977: DCE 1189   53.014900  0.024375 00
541      64,     978: DCE 1190   53.019066  0.004166 ff
542      64,     979: DCE 1191   53.114122  0.095056 00 ff 01 00 20 3b 3b 97 00
543      64,     988: DCE 1200   53.213313  0.065859 00 ff 01 00 20 3b 3b 97 00
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545      65,     213: DTE 1209   53.275488  0.028869 ff 01 00 97
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547      65,     997: DCE 1213   53.301672  0.004168 00
548      65,     998: DCE 1214   53.305836  0.004164 7f
549      65,     999: DCE 1215   53.309979  0.004143 d1
550      65,     1000: DCE 1216   53.330343  0.020364 00
551      65,     1001: DCE 1217   53.334562  0.004219 ff
552      65,     1002: DCE 1218   53.338727  0.004165 81
553      65,     1003: DCE 1219   53.429589  0.090862 00 ff 01 00 20 3b 3b 97 00
554      65,     1012: DCE 1228   53.528758  0.065863 00 ff 01 00 20 3b 3b 97 00
555
556      66,     217: DTE 1237   53.572154  0.010053 ff 01 00 97
557
558      66,     1021: DCE 1241   53.600186  0.004166 00
559      66,     1022: DCE 1242   53.604355  0.004169 7f
560      66,     1023: DCE 1243   53.608519  0.004164 d1
561      66,     1024: DCE 1244   53.628990  0.020471 00

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562   66,    1025: DCE  1245   53.633156  0.004166 ff
563   66,    1026: DCE  1246   53.637321  0.004165 e1
564   66,    1027: DCE  1247   53.728160  0.090839 00 ff 01 00 20 3b 3b 97 00
565   66,    1036: DCE  1256   53.827402  0.065913 00 ff 01 00 20 3b 3b 97 00
566   66,    1045: DCE  1265   53.926596  0.065862 00
567   66,    1046: DCE  1266   53.930760  0.004164 ff
568   66,    1047: DCE  1267   53.934928  0.004168 01
569   66,    1048: DCE  1268   53.939066  0.004138 00
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571   67,    221:  DTE  1269   53.941737  0.002671 ff
572
573   67,    1049: DCE  1270   53.943234  0.002671 20
574
575   68,    222:  DTE  1271   53.945905  0.002671 01
576
577   68,    1050: DCE  1272   53.947400  0.001495 3b
578
579   69,    223:  DTE  1273   53.950071  0.002671 00
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581   69,    1051: DCE  1274   53.951568  0.002671 3b
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583   70,    224:  DTE  1275   53.954238  0.002671 97
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585   70,    1052: DCE  1276   53.955733  0.001495 97
586   70,    1053: DCE  1277   53.959901  0.004168 00
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588   71,    225:  DTE  1278   53.962986  0.003085 ff
589   71,    226:  DTE  1279   53.967155  0.004169 01
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591   71,    1054: DCE  1280   53.968391  0.004169 f8
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593   72,    227:  DTE  1281   53.971258  0.004169 00
594   72,    228:  DTE  1282   53.975489  0.004169 97
595
596   72,    1055: DCE  1283   54.025824  0.050335 00 ff 01 00 20 3b 3b 97 00
597   72,    1064: DCE  1292   54.125007  0.065862 00
598   72,    1065: DCE  1293   54.129172  0.004165 ff
599
600   73,    229:  DTE  1294   54.132987  0.003815 ff
601
602   73,    1066: DCE  1295   54.133338  0.003815 01
603
604   74,    230:  DTE  1296   54.137155  0.003815 01
605
606   74,    1067: DCE  1297   54.137505  0.000350 00
607
608   75,    231:  DTE  1298   54.141330  0.003825 00
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610   75,    1068: DCE  1299   54.141671  0.003825 20
611
612   76,    232:  DTE  1300   54.145488  0.003825 97
613
614   76,    1069: DCE  1301   54.145840  0.000352 3b
615   76,    1070: DCE  1302   54.149979  0.004139 3b
616   76,    1071: DCE  1303   54.154144  0.004165 97
617   76,    1072: DCE  1304   54.158312  0.004168 00
618   76,    1073: DCE  1305   54.162520  0.004208 00
619   76,    1074: DCE  1306   54.166646  0.004126 ff
620   76,    1075: DCE  1307   54.224174  0.057528 00
621   76,    1076: DCE  1308   54.228342  0.004168 ff
622   76,    1077: DCE  1309   54.232506  0.004164 01
623   76,    1078: DCE  1310   54.236671  0.004165 00
624   76,    1079: DCE  1311   54.240838  0.004167 20
625   76,    1080: DCE  1312   54.245006  0.004168 3b
626   76,    1081: DCE  1313   54.249172  0.004166 3b
627
628   77,    233:  DTE  1314   54.251663  0.002491 ff
629
630   77,    1082: DCE  1315   54.253339  0.002491 97
631
632   78,    234:  DTE  1316   54.255904  0.002491 01
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634    78,     1083: DCE   1317   54.257505   0.001601 00
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636    79,     235:  DTE   1318   54.260072   0.002567 00
637    79,     236:  DTE   1319   54.264239   0.004167 97
638
639    79,     1084: DCE   1320   54.278809   0.004167 00
640    79,     1085: DCE   1321   54.282974   0.004165 7f
641    79,     1086: DCE   1322   54.287114   0.004140 d1
642    79,     1087: DCE   1323   54.323417   0.036303 00 ff 01 00 20 3b 3b 97 00
643    80,     237:  DTE   1332   54.404170   0.047447 ff 01 00 97
644
645    80,     1096: DCE   1336   54.422610   0.004334 00 ff 01 00 20 3b 3b 97 00
646    80,     1105: DCE   1345   54.460084   0.004168 00
647    80,     1106: DCE   1346   54.464250   0.004166 ff
648    80,     1107: DCE   1347   54.521831   0.057581 00
649    80,     1108: DCE   1348   54.525995   0.004164 ff
650    80,     1109: DCE   1349   54.530160   0.004165 01
651    80,     1110: DCE   1350   54.534327   0.004167 00
652    80,     1111: DCE   1351   54.538494   0.004167 20
653    80,     1112: DCE   1352   54.542663   0.004169 3b
654    80,     1113: DCE   1353   54.546828   0.004165 3b
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656    81,     241:  DTE   1354   54.547571   0.000743 ff
657
658    81,     1114: DCE   1355   54.550994   0.000743 97
659
660    82,     242:  DTE   1356   54.551737   0.000743 01
661
662    82,     1115: DCE   1357   54.555161   0.003424 00
663
664    83,     243:  DTE   1358   54.555903   0.000742 00
665    83,     244:  DTE   1359   54.560071   0.004168 97
666
667    83,     1116: DCE   1360   54.574405   0.004168 00
668    83,     1117: DCE   1361   54.578572   0.004167 7f
669    83,     1118: DCE   1362   54.582739   0.004167 d1
670    83,     1119: DCE   1363   54.621021   0.038282 00 ff 01 00 20 3b 3b 97 00
671
672    84,     245:  DTE   1372   54.680072   0.025744 ff 01 00 97
673
674    84,     1128: DCE   1376   54.707334   0.004165 00
675    84,     1129: DCE   1377   54.711489   0.004155 7f
676    84,     1130: DCE   1378   54.715655   0.004166 d1
677    84,     1131: DCE   1379   54.736073   0.020418 00
678    84,     1132: DCE   1380   54.740241   0.004168 ff
679    84,     1133: DCE   1381   54.744406   0.004165 01
680    84,     1134: DCE   1382   54.835317   0.090911 00 ff 01 00 20 3b 3b 97 00
681    84,     1143: DCE   1391   54.934488   0.065864 00 ff 01 00 20 3b 3b 97 00
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683    85,     249:  DTE   1400   54.978405   0.010588 ff 01 00 97
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685    85,     1152: DCE   1404   55.005710   0.004167 00
686    85,     1153: DCE   1405   55.009875   0.004165 7f
687    85,     1154: DCE   1406   55.014041   0.004166 d1
688    85,     1155: DCE   1407   55.033679   0.019638 00
689    85,     1156: DCE   1408   55.037843   0.004164 ff
690    85,     1157: DCE   1409   55.042010   0.004167 01
691    85,     1158: DCE   1410   55.132907   0.090897 00 ff 01 00 20 3b 3b 97 00
692    85,     1167: DCE   1419   55.232092   0.065864 00 ff 01 00 20 3b 3b 97 00
693
694    86,     253:  DTE   1428   55.282572   0.017176 ff 01 00 97
695
696    86,     1176: DCE   1432   55.309510   0.004167 00
697    86,     1177: DCE   1433   55.313678   0.004168 7f
698    86,     1178: DCE   1434   55.317845   0.004167 d1
699    86,     1179: DCE   1435   55.338235   0.020390 00
700    86,     1180: DCE   1436   55.342400   0.004165 ff
701    86,     1181: DCE   1437   55.346400   0.004000 01
702    86,     1182: DCE   1438   55.437431   0.091031 00 ff 01 00 20 3b 3b 97 00
703    86,     1191: DCE   1447   55.536676   0.065916 00 ff 01 00 20 3b 3b 97 00
704
705    87,     257:  DTE   1456   55.612574   0.042594 ff 01 00 97

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707     87,    1200: DCE  1460   55.645787  0.004168 00 ff 01 00 00 00 00 00 01 00
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709     88,    261:  DTE  1469   55.720492  0.041372 ff 01 00 01
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711     88,    1209: DCE  1473   55.875920  0.004168 00 ff 01 00 00 00 00 00 01 00
712
713     89,    265:  DTE  1482   55.910904  0.001681 ff 01 00 01
714
715     89,    1218: DCE  1486   56.106078  0.004167 00 ff 01 00 00 00 00 00 01 00
716     89,    1227: DCE  1495   56.143572  0.004165 00
717
718     90,    269:  DTE  1496   56.147572  0.004000 ff
719
720     90,    1228: DCE  1497   56.147580  0.004000 ff
721
722     91,    270:  DTE  1498   56.151739  0.004000 01
723     91,    271:  DTE  1499   56.155905  0.004000 00
724     91,    272:  DTE  1500   56.160071  0.004000 01
725
726     91,    1229: DCE  1501   68.320925  12.160854 00 ff 01 00 40 3b 3b b7 00
727
728     92,    273:  DTE  1510   68.358799  0.004572 ff 01 00 b7
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730     92,    1238: DCE  1514   68.386571  0.004167 00
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