

Data About Various Pelco Camera Systems

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¹\$Header: d:/DprotoDoc/RCS/camdata.tex,v 1.5 2008-02-04 13:40:00-08 Hamilton Exp Hamilton \$

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1 Various Camera Data

Notes

In the following lists of capabilities of Pelco's modern units (Spectras, Esprits, ExSites, etc.), an effort has been made to list important items about each type of unit. For each general type of unit:

1. There is a header section that lists characteristics that are common to all units in the series.
2. In each sub-section is listed:
 - 2.1 When available the following information is included for each camera type. In many cases, the older types of cameras are not available and in other cases the exact type of camera for each response was not checked as its response could be inferred from other models in the series.
 - 2.1.1. The string that is returned by a D_EC_QUERY command, using both subcommands of: D_ECS_QUERY_PART_NUMBER and D_ECS_QUERY_SERIAL_NUMBER
 - 2.1.2. The results of sending D_EC_EVEREST command using both subcodes of: D_ECS_VERSION_INFO_MAIN_CPU_VERSION_QRY and D_ECS_VERSION_INFO_MAIN_CPU_BUILD_QRY to get the current software revision number and its build number are included when available.
 - 2.2 The new information returned by the Mini Spectra when opcode D_EC_QUERY_DIAG_INFO (0x6F) and its reply of D_EC_QUERY_DIAG_INFO (0x71) are unclear and not included in this document.
 - 2.3 Then following specialized information about that specific sub-unit.
 - 2.4 Sometimes an entry in the general area will be overwritten in the specific sub-unit section.
 - 2.5 Speeds are in degrees per second ($^{\circ}/\text{sec}$).
 - 2.6 Angles are in degrees.
 - 2.7 Zoom limits are in maximum optical zoom and digital "times" (12X, 240X, etc.) combined.
 - 2.8 The phrase "User Programmable Presets" indicates presets that a user may program for pan/tilt/zoom position. (Iris and focus are not usually saved, because the cameras have auto-focus and auto-iris features.) Depending on the exact model of camera, the newer ones have more of this additional functionality, the focus, iris, color balance and other camera specific items are saved.
 - 2.9 PTZ units have presets 33, 34 and 83 $\rightarrow$ 99 reserved for various predefined special uses. These include flip, menu access, scanning, limit setting, IR filter control, etc. These high numbered presets are "active" in units that only have 64 presets. For units operating in "32 preset mode", presets in the range of 90 $\rightarrow$ 99 are always down converted. On a model by model basis presets in the range of 83 $\rightarrow$ 89 are also down converted.
 - 2.10 Many of the PTZ features are controlled by the installed camera. Thus on old systems a 16X camera was a top of the line system type and on a newer system design a 16X camera is only installed on "limited" functionally systems. In all cases the "SE" type of system are the "high performance" type of unit. In many of the descriptions, a simple statement such as, "16X:" or "35X:", is used to indicate the general type of camera installed and thus its capabilities.

²\$Header: d:/DprotoDoc/RCS/camdata.inc,v 1.16 2008-05-01 12:45:41-07 Hamilton Exp Hamilton \$

1.1 Camera Specific Details

When available, communications line dumps are included with each set of camera specific data. To obtain the response data for the various configuration commands, these captures have been the starting point. Additional information has come from source code analysis and informed guessing.

1.1.1 Spectra I & II

1. One full or two half Patterns
2. 64 Presets, 64 User with up to 19 extra presets being predefined.
3. Eight Alarms
4. Eight Zones
5. Pan Speed $0.5 \rightarrow 80^\circ/\text{sec}$
6. Tilt Speed: Spectra I $0.5 \rightarrow 40^\circ/\text{sec}$, Spectra II $0.5 \rightarrow 44^\circ/\text{sec}$
7. Tilt Range $+2 \rightarrow -92^\circ$, not displayed on the screen.
8. Spectra II Zoom Limits
 - 8.1 12X: Zoom Limits: 12, 24, 48, 96
 - 8.2 16X: Zoom Limits: 16, 32, 64, 128
9. Spectra I/II Pattern counts are:
 - 9.1 12X: Total Patterns: 1 full or 2 half
 - 9.2 16X: Total Patterns: 1 full or 2 half
 - 9.3 "Lite": Total Patterns: 1
10. Spectra I/II Number of programmable presets are:
 - 10.1 12X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64.
 - 10.2 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64.
 - 10.3 "Lite" Total User Programmable Presets: $1 \rightarrow 32$, for a total of 32.
- 10.1 "**pg53-0060-S331**". Note the Spectra I does not have a query response with its software revision number in it. It only sends a "general response" of four bytes. The query response was added in to the Spectra line, starting with the Spectra II.
 - 10.1.1. Max Zoom Spectra I
 - 10.1.1.1. Analog 12
 - 10.1.1.2. Digital 8
 - 10.1.2. Max Zoom Spectra II
 - 10.1.2.1. Analog 16
 - 10.1.2.2. Digital 8
 - 10.1.3. Field of View: $43 \rightarrow 3^\circ$

1.1.2 Spectra II NTSC, Query Responses

This is the older format of reply to the query command. In this format the reply consists of the program number which is null padded. It does not have an extended reply for additional software build data.

```

1 $Header: d:/DprotoDoc/RCS/S2Rev.dat,v 1.1 2007-11-13 10:49:28-08 Hamilton Exp Hamilton $
2 Spectra II, Rev S3.31
3 DCE      34      11.462325      2.093332  2.080832 ff 01 00 45 00 00 46  Part number query
4                                     P G 5 3 - 0 0 6 0 - S 3 3 1
5 DTE      41      11.492682      0.030357  0.004166 ff 01 50 47 35 33 2d 30 30 36 30 2d 53 33 33 31 00 50
6 DCE      59      12.590205      1.097523  1.026731 ff 01 01 45 00 00 47  Serial number query
7                                     P G 5 3 - 0 0 6 0 - S 3 3 1
8 DTE      66      12.621544      0.031339  0.004142 ff 01 50 47 35 33 2d 30 30 36 30 2d 53 33 33 31 00 51
9 DCE      84      13.718040      1.096496  1.025762 ff 01 00 73 00 00 74  Software rev query
10 DTE     91      13.748785      0.030745  0.004120 ff 01 00 74
11 DCE     95      14.846040      1.097255  1.084758 ff 01 02 73 00 00 76  Build query
12 DTE    102      14.877727      0.031687  0.004141 ff 01 00 76

```

1.1.3 Spectra III

1. One Pattern
2. 99 Presets, 80 User, with up to 19 presets being predefined.
3. No Alarms
4. Eight Zones
5. Pan Speed $0.5 \rightarrow 80^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 44^\circ/\text{sec}$
7. Tilt Range $+2 \rightarrow -92^\circ$
8. Preset Pan Speed: $250^\circ/\text{sec}$
9. Preset Tilt Speed: 150 or $200^\circ/\text{sec}$
10. Turbo Speed: $150^\circ/\text{sec}$
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.25^\circ$
13. Programmable Zoom Speeds
14. Eight areas of Zone Blanking
15. One Blanked Window
16. Spectra III Zoom Limits
 - 16.1 16X: Zoom Limits: 16, 32, 64, 128
 - 16.2 18X: Zoom Limits: 18, 32, 72, 144, 180, 216
17. Spectra III Pattern counts are:
 - 17.1 16X: Total Patterns: 1
 - 17.2 18X: Total Patterns: 1
18. Spectra III Number of programmable presets are:
 - 18.1 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80.
 - 18.2 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80.
 - 18.1 “**DD53TC16**”
 - 18.1.1. Max Zoom
 - 18.1.1.1. Analog 16
 - 18.1.1.2. Digital 8
 - 18.1.2. Field of View: $43 \rightarrow 3^\circ$
 - 18.2 “**DD53CBW18**”

- 18.2.1. Preset 88 = IR Filter In
- 18.2.2. Preset 89 = IR Filter Out
- 18.2.3. Max Zoom
 - 18.2.3.1. Analog 18
 - 18.2.3.2. Digital 10
- 18.2.4. Field of View: $51 \rightarrow 3^\circ$
- 18.3 Freeze frame option during presets.

DD53TC16	DD53TC16 <u> </u>
DD53TC16X	DD53TC16X <u> </u>

Table 1: Spectra III Reply Codes, these are NULL 0x00 padded.

1.1.4 Spectra III SE

1. Four Patterns
2. 150 Presets, 131 User, 19 predefined
3. Seven Alarms Inputs
4. Two AUX outputs
5. Eight Zones
6. Pan Speed $0.5 \rightarrow 80^\circ/\text{sec}$
7. Tilt Speed $0.5 \rightarrow 44^\circ/\text{sec}$
8. Tilt Range $+2 \rightarrow -92^\circ$
9. Preset Pan Speed: $360^\circ/\text{sec}$
10. Preset Tilt Speed: $200^\circ/\text{sec}$
11. Turbo Speed: $150^\circ/\text{sec}$
12. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
13. Preset Accuracy: $\pm 0.1^\circ$
14. Programmable Zoom Speeds
15. Eight areas of Zone Blanking
16. Four Blanked Windows
17. Spectra III SE Zoom Limits
 - 17.1 22X: Zoom Limits: 22, 32, 88, 176, 220, 264
 - 17.2 23X: ("CBW") Zoom Limits: 23, 32, 92, 184, 230, 276
18. Spectra III SE Pattern counts are:
 - 18.1 22X: Total Patterns: 4
 - 18.2 23X: ("CBW") Total Patterns: 4
- 18.1 "DD53M22"
 - 18.1.1. Max Zoom
 - 18.1.1.1. Analog 22
 - 18.1.1.2. Digital 12
 - 18.1.2. Field of View: $47 \rightarrow 2.2^\circ$
- 18.2 "DD53C22"
 - 18.2.1. Max Zoom
 - 18.2.1.1. Analog 22
 - 18.2.1.2. Digital 12

18.2.2. Field of View: $47 \rightarrow 2.2^\circ$

18.3 “DD53CBW”

18.3.1. Preset 88 = IR Filter In

18.3.2. Preset 89 = IR Filter Out

18.3.3. Max Zoom

18.3.3.1. Analog 23

18.3.3.2. Digital 10

18.3.4. Field of View: $54 \rightarrow 2.5^\circ$

DD53C22	DD53C22
DD53C22X	DD53C22X
DD53CBW	DD53CBW
DD53CBWX	DD53CBWX
DD53M22	DD53M22
DD53M22X	DD53M22X

Table 2: Spectra III SE Reply Codes, these are NULL 0x00 padded.

1.1.5 Spectra III SE NTSC, Query Responses

In this reply to the query command it begins to respond with its marketing model number and repeats its marketing name instead of a serial number both of which are null padded. Additional information is available in the special software rev fields. However the range of the software rev is in the format **n.nn**. Thus the rev usually fits in one byte of return data.

```

1 $Header: d:/DprotoDoc/RCS/S3Rev.dat,v 1.1 2007-11-13 10:49:32-08 Hamilton Exp Hamilton $
2 Spectra III, Rev 1.34
3 DCE      34      11.462343      2.098037      2.085538 ff 01 00 45 00 00 46 Part number query
4                                     D D 5 3 C 2 2
5 DTE      41      11.492664      0.030321      0.004167 ff 01 44 44 35 33 43 32 32 00 00 00 00 00 00 00 de
6 DCE      59      12.590233      1.097569      1.026763 ff 01 01 45 00 00 47 Serial number query
7                                     D D 5 3 C 2 2
8 DTE      66      12.620557      0.030324      0.004141 ff 01 44 44 35 33 43 32 32 00 00 00 00 00 00 00 df
9 DCE      84      13.718149      1.097592      1.026787 ff 01 00 73 00 00 74 Software rev query
10 DTE     91      13.747879      0.029730      0.004169 ff 01 01 73 00 86 fb 1.34
11 DCE     98      14.846066      1.098187      1.073205 ff 01 02 73 00 00 76 Build query
12 DTE    105      14.875918      0.029852      0.004141 ff 01 03 73 00 00 77 0

```

1.1.6 Spectra IV

1. One Pattern
2. 128 Presets
3. No Alarms
4. Eight Zones
5. Pan Speed $0.5 \rightarrow 80^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 44^\circ/\text{sec}$
7. Tilt Range $+2 \rightarrow -92^\circ$
8. Preset Pan Speed: 360 or $400^\circ/\text{sec}$
9. Preset Tilt Speed: $200^\circ/\text{sec}$
10. Turbo Speed: $150^\circ/\text{sec}$
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.1^\circ$
13. Programmable Zoom Speeds
14. Eight areas of Zone Blanking
15. Eight Blanked Windows
16. Spectra IV Zoom Limits
 - 16.1 16X: Zoom Limits: 16, 32, 64, 128
 - 16.2 18X: Zoom Limits: 18, 32, 72, 144, 180, 216
 - 16.3 22X: Zoom Limits: 22, 32, 88, 176, 220, 264
 - 16.4 23X: Zoom Limits: 23, 32, 92, 184, 230, 276
 - 16.5 35X: Zoom Limits: 35, 70, 140, 280, 350, 420
17. Spectra IV Zoom times to go from full wide to max zoom.
 - 17.1 16X: Zoom Times: 1.9, 3.6, 6.0 seconds
 - 17.2 18X: Zoom Times: 2.9, 4.2, 5.8 seconds
18. Spectra IV Pattern counts are:
 - 18.1 16X: Total Patterns: 1
 - 18.2 18X: Total Patterns: 1
19. Spectra IV Number of programmable presets are:
 - 19.1 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ and $100 \rightarrow 150$ for a total of 130.
 - 19.2 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ and $100 \rightarrow 150$ for a total of 130.

19.3 22X: Total User Programmable Presets: 1 → 32, 35 → 82 and 100 → 256 for a total of 236.

19.4 23X: Total User Programmable Presets: 1 → 32, 35 → 82 and 100 → 256 for a total of 236.

19.5 35X: Total User Programmable Presets: 1 → 32, 35 → 82 and 100 → 256 for a total of 236.

19.1 “DD4TC16”

19.1.1. Max Zoom

19.1.1.1. Analog 16

19.1.1.2. Digital 8

19.1.2. Field of View: 43 → 3°

19.2 “DD4CBW18”

19.2.1. Preset 88 = IR Filter In

19.2.2. Preset 89 = IR Filter Out

19.2.3. Max Zoom

19.2.3.1. Analog 18

19.2.3.2. Digital 12

19.2.4. Field of View: 51 → 3°

DD4CBW18	DD4CBW18 <u> </u>
DD4CBW18X	DD4CBW18X <u> </u>
DD4TC16	DD4TC16 <u> </u>
DD4TC16X	DD4TC16X <u> </u>

Table 3: Spectra IV Reply Codes, these are NULL 0x00 padded.

1.1.7 Spectra IV TC16

The reply to the query command consists of its marketing name which is null padded and a serial number. In this case the software rev number has been changed to have a format of **n.nnn** and starts to take up two bytes of data.

```

1 $Header: d:/DprotoDoc/RCS/s4tc16.dat,v 1.2 2008-02-04 13:59:34-08 Hamilton Exp Hamilton $
2 Spectra IV, TC-16, Rev 1.07
3 DTE      34      10.365612    0.004163  ff 01 00 45 00 00 46  Part number query
4                                     D D 4 T C 1 6
5 DCE      41      10.394552    0.004022  ff 01 44 44 34 54 43 31 36 00 00 00 00 00 00 01
6 DTE      59      11.518137    0.003999  ff 01 01 45 00 00 47  Serial number query
7                                     7 4 5 6 7 4 7
8 DCE      66      11.547364    0.004310  ff 01 37 34 35 36 37 34 37 00 00 00 00 00 00 00 c0
9 DTE      84      12.670377    0.004147  ff 01 00 73 00 00 74  Software rev query
10 DCE     91      12.699736    0.004443  ff 01 01 73 04 2e a7  1.070
11 DTE     98      13.822615    0.004165  ff 01 02 73 00 00 76  Build query
12 DCE    105      13.851712    0.004179  ff 01 03 73 00 01 78  1

```

1.1.8 Spectra IV SE

1. Eight Patterns
2. 256 Presets
3. Seven Alarms
4. Eight Zones
5. Pan Speed $0.5 \rightarrow 80^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 44^\circ/\text{sec}$
7. Tilt Range $+2 \rightarrow -92^\circ$
8. Tilt Range $+18 \rightarrow -92^\circ$, for the Horizon (“look up”) model.
9. Preset Pan Speed: 360 or $400^\circ/\text{sec}$
10. Preset Tilt Speed: $200^\circ/\text{sec}$
11. Turbo Speed: $150^\circ/\text{sec}$
12. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
13. Preset Accuracy: $\pm 0.1^\circ$
14. Programmable Zoom Speeds
15. Eight areas of Zone Blanking
16. Eight Blanked Windows
17. Spectra IV SE Zoom Limits
 - 17.1 16X: Zoom Limits: 16, 32, 64, 128
 - 17.2 18X: Zoom Limits: 18, 32, 72, 144, 180, 216
18. Spectra IV SE Zoom times to go from full wide to max zoom.
 - 18.1 22X: Zoom Times: 2.4, 3.9, 6.3 seconds
 - 18.2 23X: Zoom Times: 2.9, 4.2, 5.8 seconds
 - 18.3 35X: Zoom Times: 3.2, 4.6, 6.6 seconds
19. Spectra IV SE Pattern counts are:
 - 19.1 22X: Total Patterns: 8
 - 19.2 23X: Total Patterns: 8
 - 19.3 35X: Total Patterns: 8
20. Spectra IV SE Number of programmable presets are:
 - 20.1 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ and $100 \rightarrow 150$ for a total of 130.
 - 20.2 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ and $100 \rightarrow 150$ for a total of 130.

20.3 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ and $100 \rightarrow 256$ for a total of 236.

20.4 23X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ and $100 \rightarrow 256$ for a total of 236.

20.5 35X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ and $100 \rightarrow 256$ for a total of 236.

20.1 “DD4C22”

20.1.1. Max Zoom

20.1.1.1. Analog 22

20.1.1.2. Digital 12

20.1.2. Field of View: $47 \rightarrow 2.2^\circ$

20.2 “DD4M22”

20.2.1. Max Zoom

20.2.1.1. Analog 22

20.2.1.2. Digital 12

20.2.2. Field of View: $47 \rightarrow 2.2^\circ$

20.3 “DD4CBW23”

20.3.1. Preset 88 = IR Filter In

20.3.2. Preset 89 = IR Filter Out

20.3.3. Max Zoom

20.3.3.1. Analog 23

20.3.3.2. Digital 12

20.3.4. Field of View: $54 \rightarrow 2.5^\circ$

20.4 “DD4CBW35”

20.4.1. Preset 88 = IR Filter In

20.4.2. Preset 89 = IR Filter Out

20.4.3. Max Zoom

20.4.3.1. Analog 35

20.4.3.2. Digital 12

20.4.4. Field of View: $55.8 \rightarrow 1.7^\circ$

21. “DD4H35”

21.1 Preset 88 = IR Filter In

21.2 Preset 89 = IR Filter Out

21.3 Max Zoom

21.3.1. Analog 35

21.3.2. Digital 12

21.4 Field of View: $55.8 \rightarrow 1.7^\circ$

1.1.9 Spectra IV SE NTSC, Query Responses

The reply to the query command consists of its marketing name which is null padded and a serial number. In this case the software rev number has been changed to have a format of **n.nnn** and starts to take up two bytes of data.

```

1 $Header: d:/DprotoDoc/RCS/S4Rev.dat,v 1.1 2007-11-13 10:49:36-08 Hamilton Exp Hamilton $
2 Spectra IV, Rev 1.050
3 DCE      34      11.470258      2.097307      2.084807 ff 01 00 45 00 00 46 Part number query
4                                     D D 4 C B W 3 5
5 DTE      41      11.500216      0.029958      0.004142 ff 01 44 44 34 43 42 57 33 35 00 00 00 00 00 00 47
6 DCE      59      12.598173      1.097957      1.027125 ff 01 01 45 00 00 47 Serial number query
7                                     5 7 7 9 8 4 2
8 DTE      66      12.628027      0.029854      0.004166 ff 01 35 37 37 39 38 34 32 00 00 00 00 00 00 00 00 c2
9 DCE      84      13.726064      1.098037      1.027230 ff 01 00 73 00 00 74 Software rev query
10 DTE     91      13.756231      0.030167      0.004140 ff 01 01 73 04 1a 93 1.050
11 DCE     98      14.854007      1.097776      1.072777 ff 01 02 73 00 00 76 Build query
12 DTE    105      14.884018      0.030011      0.004165 ff 01 03 73 00 01 78 1

```

1.1.10 Spectra IV Horizon NTSC, Query Responses

The reply to the query command consists of its marketing name which is null padded and a serial number. In this case the software rev number has been changed to have a format of **n.nnn** and starts to take up two bytes of data.

```

1 $Header: d:/DprotoDoc/RCS/s4h.dat,v 1.1 2008-02-04 08:48:04-08 Hamilton Exp Hamilton $
2 Spectra IV Horizon, rev 1.071
3 DTE      34      10.430965      0.001054 ff 01 00 45 00 00 46 Part number query
4                                     D D 4 H 3 5
5 DCE      41      10.438667      0.001436 ff 01 44 44 34 48 33 35 00 00 00 00 00 00 00 00 b3
6 DTE      59      11.583296      0.001221 ff 01 01 45 00 00 47 Serial number query
7                                     8 4 5 4 0 8 0
8 DCE      66      11.591231      0.001683 ff 01 38 34 35 34 30 38 30 00 00 00 00 00 00 00 b5
9 DTE      84      12.735633      0.001047 ff 01 00 73 00 00 74 Software rev query
10 DCE     91      12.743471      0.001585 ff 01 01 73 04 2f a8 1.071
11 DTE     98      13.886954      0.001042 ff 01 02 73 00 00 76 Build query
12 DCE    105      13.894669      0.001462 ff 01 03 73 00 01 78 1

```

DD4C22	DD4C22
DD4C22X	DD4C22X
DD4CBW23	DD4CBW23
DD4CBW23X	DD4CBW23X
DD4CBW35	DD4CBW35
DD4CBW35X	DD4CBW35X
DD4M22	DD4M22
DD4M22X	DD4M22X
DD4H35	DD4H35
DD4H35X	DD4H35X

Table 4: Spectra IV SE Reply Codes, these are NULL 0x00 padded.

1.1.11 Esprit IOP, no wiper

1. One full or two half Patterns
2. 64 Presets
3. No Alarms
4. One AUX output
5. Eight Zones
6. Pan Speed $0.2 \rightarrow 40^\circ/\text{sec}$
7. Tilt Speed $0.5 \rightarrow 20^\circ/\text{sec}$
8. Tilt Range $+33 \rightarrow -83^\circ$
9. Preset Pan Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
10. Preset Tilt Speed: $20^\circ/\text{sec}$
11. Turbo Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
12. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
13. Preset Accuracy: $\pm 0.1^\circ$
14. Programmable Zoom Speeds
15. Eight areas of Zone Blanking
16. Preset call of 94 will force the WatchDog timer to time out and reset the system starting with rev 3.70.
17. Esprit IOP Zoom Limits
 - 17.1 16X: Zoom Limits: 16, 32, 64, 128, 160
 - 17.2 24X: Zoom Limits: 24, 32, 96, 192, 240, 288
 - 17.3 35X: Zoom Limits: 35, 70, 140, 280, 350, 420
18. Esprit IOP Number of programmable presets are:
 - 18.1 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 18.2 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 18.3 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 18.4 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 18.5 24X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. All Models.
- 18.1 "CBW" Models:
 - 18.1.1. Preset 88 = IR Filter In
 - 18.1.2. Preset 89 = IR Filter Out
- 18.2 "ES30TC16"
 - 18.2.1. Max Zoom

- 18.2.1.1. Analog 16
- 18.2.1.2. Digital 10
- 18.2.2. Field of View: $43 \rightarrow 3^\circ$
- 18.3 “**ES30C22**”
 - 18.3.1. Max Zoom
 - 18.3.1.1. Analog 22
 - 18.3.1.2. Digital 10
 - 18.3.2. Field of View: $47 \rightarrow 2.2^\circ$
- 18.4 “**ES30CBW18**”
 - 18.4.1. Max Zoom
 - 18.4.1.1. Analog 23
 - 18.4.1.2. Digital 12
 - 18.4.2. Field of View: $54 \rightarrow 2.5^\circ$
- 18.5 “**ES30CBW24**”
 - 18.5.1. Max Zoom
 - 18.5.1.1. Analog 24
 - 18.5.1.2. Digital 10
 - 18.5.2. Field of View: $50.7 \rightarrow yy^\circ$
- 18.6 “**ES30CBW35**”
 - 18.6.1. Max Zoom
 - 18.6.1.1. Analog 35
 - 18.6.1.2. Digital 12
 - 18.6.2. Field of View: $55.8 \rightarrow 1.7^\circ$

ES30C16	ES30C16UUUUUUUU
ES30C16X	ES30C16XUUUUUUU
ES30C22	ES30C22UUUUUUUU
ES30C22X	ES30C22XUUUUUUU
ES30CBW18	ES30CBW18UUUUUU
ES30CBW18X	ES30CBW18XUUUUU
ES30CBW24	ES30CBW24UUUUUU
ES30CBW24X	ES30CBW24XUUUUU

Table 5: Esprit IOP Reply Codes, these are blank 0x20 padded.

1.1.12 Esprit IOC, no wiper, pressurized

1. One full or two half Patterns
2. 64 Presets
3. No Alarms
4. Eight Zones
5. Pan Speed $0.2 \rightarrow 40^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 20^\circ/\text{sec}$
7. Tilt Range $+33 \rightarrow -83^\circ$
8. Preset Pan Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
9. Preset Tilt Speed: $20^\circ/\text{sec}$
10. Turbo Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.1^\circ$
13. Programmable Zoom Speeds
14. Eight areas of Zone Blanking
15. Preset call of 94 will force the WatchDog timer to time out and reset the system starting with rev 3.70.
16. Esprit IOC Zoom Limits
 - 16.1 16X: Zoom Limits: 16, 32, 64, 128, 160
 - 16.2 22X: Zoom Limits: 22, 32, 88, 176, 220
 - 16.3 24X: Zoom Limits: 24, 32, 96, 192, 240, 288
 - 16.4 35X: Zoom Limits: 35, 70, 140, 280, 350, 420
17. Esprit IOC Number of programmable presets are:
 - 17.1 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.2 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.3 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.4 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.5 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.6 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.7 24X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. All Models.
- 17.1 "CBW" Models:
 - 17.1.1. Preset 88 = IR Filter In
 - 17.1.2. Preset 89 = IR Filter Out

17.2 “ES30PTC16”

17.2.1. Max Zoom

17.2.1.1. Analog 16

17.2.1.2. Digital 10

17.2.2. Field of View: $43 \rightarrow 3^\circ$

17.3 “ES30PC22”

17.3.1. Max Zoom

17.3.1.1. Analog 22

17.3.1.2. Digital 10

17.3.2. Field of View: $47 \rightarrow 3^\circ$

17.4 “ES30PCBW18”

17.4.1. Max Zoom

17.4.1.1. Analog 23

17.4.1.2. Digital 12

17.4.2. Field of View: $54 \rightarrow 2.5^\circ$

17.5 “ES30PCBW24”

17.5.1. Max Zoom

17.5.1.1. Analog 24

17.5.1.2. Digital 10

17.5.2. Field of View: $50.7 \rightarrow yy^\circ$

17.6 “ES30PCBW35”

17.6.1. Max Zoom

17.6.1.1. Analog 35

17.6.1.2. Digital 12

17.6.2. Field of View: $55.8 \rightarrow 1.7^\circ$

ES30PC16	ES30PC16_
ES30PC16X	ES30PC16X_
ES30PC22	ES30PC22_
ES30PC22X	ES30PC22X_
ES30PCBW18	ES30PCBW18_
ES30PCBW18X	ES30PCBW18X_
ES30PCBW24	ES30PCBW24_
ES30PCBW24X	ES30PCBW24X_

Table 6: Esprit IOC Reply Codes, these are blank 0x20 padded.

1.1.13 Esprit IOP, wiper

1. One full or two half Patterns
2. 64 Presets
3. No Alarms
4. Eight Zones
5. Pan Speed $0.2 \rightarrow 40^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 20^\circ/\text{sec}$
7. Tilt Range $+33 \rightarrow -83^\circ$
8. Preset Pan Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
9. Preset Tilt Speed: $20^\circ/\text{sec}$
10. Turbo Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.1^\circ$
13. Programmable Zoom Speeds
14. Eight areas of Zone Blanking
15. Preset call of 94 will force the WatchDog timer to time out and reset the system starting with rev 3.70.
16. Esprit IOP Zoom Limits
 - 16.1 16X: Zoom Limits: 16, 32, 64, 128, 160
 - 16.2 22X: Zoom Limits: 22, 32, 88, 176, 220
 - 16.3 23X: Zoom Limits: 23, 32, 92, 184, 230
 - 16.4 24X: Zoom Limits: 24, 32, 96, 192, 240, 288
 - 16.5 35X: Zoom Limits: 35, 70, 140, 280, 350, 420
17. Esprit IOP Number of programmable presets are:
 - 17.1 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.2 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.3 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.4 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.5 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.6 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.7 24X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. All Models.
 - 17.1 "CBW" Models:
 - 17.1.1. Preset 88 = IR Filter In

17.1.2. Preset 89 = IR Filter Out

17.2 “ES31PTC16”

17.2.1. Max Zoom

17.2.1.1. Analog 16

17.2.1.2. Digital 10

17.2.2. Field of View: $43 \rightarrow 3^\circ$

17.3 “ES31PC22”

17.3.1. Max Zoom

17.3.1.1. Analog 22

17.3.1.2. Digital 10

17.3.2. Field of View: $47 \rightarrow 3^\circ$

17.4 “ES31PCBW18”

17.4.1. Max Zoom

17.4.1.1. Analog 23

17.4.1.2. Digital 12

17.4.2. Field of View: $54 \rightarrow 2.5^\circ$

17.5 “ES31PCBW24”

17.5.1. Max Zoom

17.5.1.1. Analog 24

17.5.1.2. Digital 10

17.5.2. Field of View: $50.7 \rightarrow yy^\circ$

17.6 “ES31PCBW35”

17.6.1. Max Zoom

17.6.1.1. Analog 35

17.6.1.2. Digital 12

17.6.2. Field of View: $55.8 \rightarrow 1.7^\circ$

ES31C16	ES31C16_
ES31C16X	ES31C16X_
ES31C22	ES31C22_
ES31C22X	ES31C22X_
ES31CBW18	ES31CBW18_
ES31CBW18X	ES31CBW18X_
ES31CBW24	ES31CBW24_
ES31CBW24X	ES31CBW24X_

Table 7: Esprit IOP with wiper Reply Codes, these are blank 0x20 padded.

1.1.14 Esprit IOP PAL, Query Responses

In this reply to the query command it gives out its marketing name which is blank padded and repeats its marketing name instead of a serial number. For the software revision commands, it returns with an Endura NAK to indicate that it does not support the command.

```

1 $Header: d:/DprotoDoc/RCS/EsRev.dat,v 1.1 2007-11-13 11:04:11-08 Hamilton Exp Hamilton $
2 Esprit 24X, Rev 3.36 PAL, With wiper
3 DCE      34      10.558229      1.120800  1.108300 ff 01 00 45 00 00 46  Part number query
4                                     E S 3 1 C B W 2 4 X
5 DTE      41      10.588681      0.030452  0.004141 ff 01 45 53 33 31 43 42 57 32 34 58 20 20 20 7d
6 DCE      59      11.709581      1.120900  1.050069 ff 01 01 45 00 00 47  Serial number query
7                                     E S 3 1 C B W 2 4 X
8 DTE      66      11.742013      0.032432  0.004140 ff 01 45 53 33 31 43 42 57 32 34 58 20 20 20 20 7e
9 DCE      84      12.862889      1.120876  1.050043 ff 01 00 73 00 00 74  Software rev query
10 DTE     91      12.892847      0.029958  0.004164 ff 01 00 01 00 00 02  Endura Nak
11 DCE     98      14.014217      1.121370  1.096372 ff 01 02 73 00 00 76  Build query
12 DTE    105      14.045763      0.031546  0.004298 ff 01 00 01 00 00 02  Endura Nak

```

1.1.15 Esprit IOC, wiper, pressurized

1. One full or two half Patterns
2. 64 Presets
3. No Alarms
4. Eight Zones
5. Pan Speed $0.2 \rightarrow 40^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 20^\circ/\text{sec}$
7. Tilt Range $+33 \rightarrow -83^\circ$
8. Preset Pan Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
9. Preset Tilt Speed: $20^\circ/\text{sec}$
10. Turbo Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.1^\circ$
13. Programmable Zoom Speeds
14. Eight areas of Zone Blanking
15. Preset call of 94 will force the WatchDog timer to time out and reset the system starting with rev 3.70.
16. Esprit IOC Zoom Limits
 - 16.1 16X: Zoom Limits: 16, 32, 64, 128, 160
 - 16.2 22X: Zoom Limits: 22, 32, 88, 176, 220
 - 16.3 23X: Zoom Limits: 23, 32, 92, 184, 230
 - 16.4 24X: Zoom Limits: 24, 32, 96, 192, 240, 288
 - 16.5 35X: Zoom Limits: 35, 70, 140, 280, 350, 420
17. Esprit IOC Number of programmable presets are:
 - 17.1 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.2 16X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.3 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.4 18X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.5 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.6 22X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.7 23X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 17.8 23X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 17.9 24X: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. All Models.

17.1 “CBW” Models:

- 17.1.1. Preset 88 = IR Filter In
- 17.1.2. Preset 89 = IR Filter Out

17.2 “**ES31PTC16**”

- 17.2.1. Max Zoom
 - 17.2.1.1. Analog 16
 - 17.2.1.2. Digital 10
- 17.2.2. Field of View: $43 \rightarrow 3^\circ$

17.3 “**ES31PC22**”

- 17.3.1. Max Zoom
 - 17.3.1.1. Analog 22
 - 17.3.1.2. Digital 10
- 17.3.2. Field of View: $47 \rightarrow 3^\circ$

17.4 “**ES31PCBW18**”

- 17.4.1. Max Zoom
 - 17.4.1.1. Analog 23
 - 17.4.1.2. Digital 12
- 17.4.2. Field of View: $54 \rightarrow 2.5^\circ$

17.5 “**ES31PCBW24**”

- 17.5.1. Max Zoom
 - 17.5.1.1. Analog 24
 - 17.5.1.2. Digital 10
- 17.5.2. Field of View: $50.7 \rightarrow yy^\circ$

17.6 “**ES31PCBW35**”

- 17.6.1. Max Zoom
 - 17.6.1.1. Analog 35
 - 17.6.1.2. Digital 12
- 17.6.2. Field of View: $55.8 \rightarrow 1.7^\circ$

ES31PC16	ES31PC16_
ES31PC16X	ES31PC16X_
ES31PC22	ES31PC22_
ES31PC22X	ES31PC22X_
ES31PCBW18	ES31PCBW18_
ES31PCBW18X	ES31PCBW18X_
ES31PCBW24	ES31PCBW24_
ES31PCBW24X	ES31PCBW24X_

Table 8: Esprit IOP with wiper Reply Codes, these are blank 0x20 padded.

1.1.16 Esprit 3012, Box Camera

1. One full or two half Patterns
2. 64 Presets
3. No Alarms
4. Eight Zones
5. Pan Speed $0.2 \rightarrow 40^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 20^\circ/\text{sec}$
7. Tilt Range $+33 \rightarrow -83^\circ$
8. Preset Pan Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
9. Preset Tilt Speed: $20^\circ/\text{sec}$
10. Turbo Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.1^\circ$
13. Programmable Zoom Speeds: None
14. Eight areas of Zone Blanking
15. Preset call of 94 will force the WatchDog timer to time out and reset the system starting with rev 3.70.
16. Esprit 3012 Number of programmable presets are:
 - 16.1 Any Camera: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 66$ for a total of 64. Early Models.
 - 16.2 Any Camera: Total User Programmable Presets: $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80. Later Models.
 - 16.1 “**ES3012** ”

The query reply for an Esprit 3012 with a box camera is more complex than expected.

1. **ES3012**: Note the mix of blank and NULs. In hex it is:

45 53 33 30 31 32 20 00 00 00 00 00 00 00 00

1.1.17 Esprit TI, Thermal Imager

1. One full or two half Patterns
2. 99 Presets, 80 user defined, 19 predefined
3. No Alarms
4. Eight Zones
5. Pan Speed $0.2 \rightarrow 40^\circ/\text{sec}$
6. Tilt Speed $0.5 \rightarrow 20^\circ/\text{sec}$
7. Tilt Range $+33 \rightarrow -83^\circ$
8. Preset Pan Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
9. Preset Tilt Speed: $20^\circ/\text{sec}$
10. Turbo Speed: $100^\circ/\text{sec}$ or $50^\circ/\text{sec}$ depending on the wind speed profile in use.
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.1^\circ$
13. Programmable Zoom Speeds: N/A
14. Eight areas of Zone Blanking
 - 14.1 All models:
 - 14.1.1. Preset 85 = Black Hot
 - 14.1.2. Preset 86 = White Hot
 - 14.1.3. Preset 87 = Color 1
 - 14.1.4. Preset 88 = Rain 1
 - 14.2 “**ES3014TI**”
 - 14.2.1. Field of view: 50°
 - 14.3 “**ES3035TI**”
 - 14.3.1. Field of view: 20°
 - 14.4 “**ES3050TI**”
 - 14.4.1. Field of view: 14°

1.1.18 Esprit TI NTSC, Query Responses

In this reply to the query command it gives out its marketing name which is null padded and it also starts to give out its serial number. For the software revision commands, it returns with an Endura NAK to indicate that it does not support the command.

```

1 $Header: d:/DprotoDoc/RCS/TIRev.dat,v 1.2 2007-11-30 15:39:15-08 Hamilton Exp Hamilton $
2 Esprit TI, Rev unknown
3 DCE      34      11.463211      2.096565      2.084064 ff 01 00 45 00 00 46 Part number query
4                                     E S 3 0 1 4 T I
5 DTE      41      11.497948      0.034737      0.004165 ff 01 45 53 33 30 31 34 54 49 00 00 00 00 00 00 44
6 DCE      59      12.591196      1.093248      1.022412 ff 01 01 45 00 00 47 Serial number query
7                                     6 7 2 4 3 7 0
8 DTE      66      12.621723      0.030527      0.004141 ff 01 36 37 32 34 33 37 30 00 00 00 00 00 00 00 b5
9 DCE      84      13.711300      1.089577      1.018744 ff 01 00 73 00 00 74 Software rev query
10 DTE     91      13.745056      0.033756      0.004166 ff 01 00 01 00 00 02 Endura Nak
11 DCE     98      14.831403      1.086347      1.061347 ff 01 02 73 00 00 76 Build query
12 DTE    105      14.862998      0.031595      0.004168 ff 01 00 01 00 00 02 Endura Nak

```

ES3014TI	ES3014TI_ _ _ _ _
ES3014TI1	ES3014TI1_ _ _ _ _
ES3014TIX	ES3014TIX_ _ _ _ _
ES3014TIX1	ES3014TIX1_ _ _ _ _
ES3035TI	ES3035TI_ _ _ _ _
ES3035TI1	ES3035TI1_ _ _ _ _
ES3035TIX	ES3035TIX_ _ _ _ _
ES3035TIX1	ES3035TIX1_ _ _ _ _
ES3050TI	ES3050TI_ _ _ _ _
ES3050TI1	ES3050TI1_ _ _ _ _
ES3050TIX	ES3050TIX_ _ _ _ _
ES3050TIX1	ES3050TIX1_ _ _ _ _

Table 9: Esprit TI Thermal Imager Reply Codes, these are NULL 0x00 padded.

1.1.19 ExSite

1. Four Patterns
2. 99 Presets, 19 predefined, 80 user defined
3. Seven Alarms
4. Three AUX Outputs
5. Eight Zones
6. Pan Speed $0.1 \rightarrow 36.87^\circ/\text{sec}$
7. Tilt Speed $0.5 \rightarrow 20^\circ/\text{sec}$
8. Tilt Range $+90 \rightarrow -90^\circ$
9. Preset Pan Speed: $40^\circ/\text{sec}$
10. Preset Tilt Speed: $20^\circ/\text{sec}$
11. Turbo Speed: $40^\circ/\text{sec}$
12. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
13. Preset Accuracy: $\pm 0.1^\circ$
14. Programmable Zoom Speeds
15. Eight areas of Zone Blanking
16. All models of the ExSite have Four Total Patterns.
17. All models of the ExSite have $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80 programmable presets.
 - 17.1 All models:
 - 17.1.1. Preset 84 = Aux 1, Set = on, Call = off
 - 17.1.2. Preset 85 = Aux 2, Set = on, Call = off
 - 17.1.3. Preset 86 = Wiper
 - 17.1.4. Preset 87 = Wash
 - 17.2 **"IPSMX30C22"**
 - 17.2.1. Max Zoom
 - 17.2.1.1. Analog 22
 - 17.2.1.2. Digital 12
 - 17.2.2. Field of view: $47 \rightarrow 2.2^\circ$
 - 17.3 **"IPSMX30CBW"**
 - 17.3.1. Preset 88 = IR Filter In
 - 17.3.2. Preset 89 = IR Filter Out
 - 17.3.3. Max Zoom
 - 17.3.3.1. Analog 23
 - 17.3.3.2. Digital 12
 - 17.3.4. Field of view: $54 \rightarrow 2.5^\circ$

1.1.20 ExSite NTSC, Query Responses

The ExSite responds with its marketing model number which is blank padded, but does not have a serial number to respond with. The software rev information is the same as that provided by the Spectra III.

```

1  $Header: d:/DprotoDoc/RCS/ExRev.dat,v 1.1 2007-11-13 10:49:43-08 Hamilton Exp Hamilton $
2  ExSite, Rev 1.13
3  DCE      34      10.462784      1.090123  1.077623 ff 01 00 45 00 00 46  Part number query
4                                     I P S X M 3 0 C 2 2
5  DTE      41      10.492636      0.029852  0.004143 ff 01 49 50 53 58 4d 33 30 43 32 32 20 20 20 20 82
6  DCE      59      11.582862      1.090226  1.019417 ff 01 01 45 00 00 47  Serial number query
7                                     I P S X M 3 0 C 2 2
8  DTE      66      11.612609      0.029747  0.004165 ff 01 49 50 53 58 4d 33 30 43 32 32 20 20 20 20 83
9  DCE      84      12.702991      1.090382  1.019574 ff 01 00 73 00 00 74  Software rev query
10 DTE      91      12.733001      0.030010  0.004167 ff 01 01 73 00 71 e6  1.13
11 DCE      98      13.823069      1.090068  1.065095 ff 01 02 73 00 00 76  Build query
12 DTE     105      13.852974      0.029905  0.004162 ff 01 03 73 00 00 77  0

```

IPSXM30C22	IPSXM30C22_
IPSXM30C22X	IPSXM30C22X_
IPSXM30CBW23	IPSXM30CBW23_
IPSXM30CBW23X	IPSXM30CBW23X_
IPSXM31C22	IPSXM31C22_
IPSXM31C22X	IPSXM31C22X_
IPSXM31CBW23	IPSXM31CBW23_
IPSXM31CBW23X	IPSXM31CBW23X_

Table 10: ExSite Reply Codes, with and without wipers, these are blank 0x20 padded.

1.1.21 ExSite, fixed

1. No Patterns
2. 99 Presets, 19 predefined, 80 user defined
3. Seven Alarms
4. Three AUX Outputs
5. Manual Pan Range: 200°
6. Manual Tilt Range: $\pm 90^\circ$
7. All models of the fixed ExSite have $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80 programmable presets.

7.1 “XM30C22”

- 7.1.1. Preset 86 = Wiper
- 7.1.2. Preset 87 = Wash
- 7.1.3. Max Zoom
 - 7.1.3.1. Analog 22
 - 7.1.3.2. Digital 12
- 7.1.4. Field of view: $47 \rightarrow 2.2^\circ$
- 7.1.5. Preset 88 = Reserved
- 7.1.6. Preset 89 = Reserved

7.2 “XM30CBW”

- 7.2.1. Preset 84 = Aux 1, Set = on, Call = off
- 7.2.2. Preset 85 = Aux 2, Set = on, Call = off
- 7.2.3. Preset 86 = Wiper
- 7.2.4. Preset 87 = Wash
- 7.2.5. Preset 88 = IR Filter In
- 7.2.6. Preset 89 = IR Filter Out
- 7.2.7. Max Zoom
 - 7.2.7.1. Analog 23
 - 7.2.7.2. Digital 12
- 7.2.8. Field of view: $54 \rightarrow 2.5^\circ$

1.1.22 ExSite, fixed mount, PAL, Query Responses

The Fixed ExSite responds with a modified version of its marketing model number which is blank padded, but does not have a serial number to respond with. This is for an ExSite Fixed mount with a CBW23, PAL camera installed. The software rev information is the same as that provided by the Spectra III.

```

1 $Header: d:/DprotoDoc/RCS/FExRevP.dat,v 1.2 2007-12-31 12:37:57-08 Hamilton Exp Hamilton $
2 Fixed ExSite rev 1.13
3 DCE      34      10.463435    0.004167 ff 01 00 45 00 00 46  Part number query
4                                     X M 3 1 C B W 2 3 X
5 DTE      41      10.493028    0.004673 ff 01 58 4d 33 31 43 42 57 32 33 58 20 20 20 20 20 89

```

```

6 DCE      59      11.583435    0.004167 ff 01 01 45 00 00 47  Serial number query
7                                     X M 3 1 C B W 2 3 X
8 DTE      66      11.612976    0.004621 ff 01 58 4d 33 31 43 42 57 32 33 58 20 20 20 20 8a
9 DCE      84      12.703515    0.004171 ff 01 00 73 00 00 74  Software rev query
10 DTE     91      12.732950    0.004518 ff 01 01 73 00 71 e6  1.13
11 DCE     98      13.823617    0.004167 ff 01 02 73 00 00 76  Built query
12 DTE    105      13.853314    0.004779 ff 01 03 73 00 00 77  0

```

1.1.23 ExSite, fixed mount, NTSC, Query Responses

The Fixed ExSite responds with a modified version of its marketing model number which is blank padded, but does not have a serial number to respond with. This is for an ExSite Fixed mount with a C22, NTSC camera installed. The software rev information is the same as that provided by the Spectra III.

```

1 $Header: d:/DprotoDoc/RCS/FExRevN.dat,v 1.3 2008-01-04 11:55:16-08 Hamilton Exp Hamilton $
2 Fixed ExSite rev 1.13
3 DTE      34      10.558073    0.004166 ff 01 00 45 00 00 46  Part number query
4                                     X M 3 0 C 2 2
5 DCE      41      10.587717    0.004724 ff 01 58 4d 33 30 43 32 32 20 20 20 20 20 20 20 f6
6 DTE      59      11.710315    0.004167 ff 01 01 45 00 00 47  Serial number query
7                                     X M 3 0 C 2 2
8 DCE      66      11.739750    0.004495 ff 01 58 4d 33 30 43 32 32 20 20 20 20 20 20 20 f7
9 DTE      84      12.860571    0.004166 ff 01 00 73 00 00 74  Software rev query
10 DCE     91      12.890114    0.004493 ff 01 01 73 00 71 e6  1.13
11 DTE     98      14.014062    0.004164 ff 01 02 73 00 00 76  Build query
12 DCE    105      14.043369    0.004388 ff 01 03 73 00 00 77  0

```

XM30C22	XM30C22
XM30C22X	XM30C22X
XM30CBW23	XM30CBW23
XM30CBW23X	XM30CBW23X
XM31C22	XM31C22
XM31C22X	XM31C22X
XM31CBW23	XM31CBW23
XM31CBW23X	XM31CBW23X

Table 11: Fixed ExSite Reply Codes, with and without wipers, these are blank 0x20 padded.

1.1.24 Mini Spectra

1. One Pattern
2. 64 Presets, 11 predefined, 53 user defined
3. No Alarms
4. Four Zones
5. Pan Speed $0.4 \rightarrow 78.8^\circ/\text{sec}$
6. Tilt Speed $0.7 \rightarrow 41.6^\circ/\text{sec}$
7. Tilt Range $+3 \rightarrow -93^\circ$
8. Preset Pan Speed: $140^\circ/\text{sec}$
9. Preset Tilt Speed: $80^\circ/\text{sec}$
10. Turbo Speed: $100^\circ/\text{sec}$
11. Pan Scan Speed: $1 \rightarrow 40^\circ/\text{sec}$
12. Preset Accuracy: $\pm 0.5^\circ$
13. Programmable Zoom Speeds
14. Eight areas of Zone Blanking
15. One Blanked Window
16. Spectra Mini Zoom Limits
 - 16.1 10X: Zoom Limits: 10, 32, 40, 80
17. A Spectra Mini has one pattern.
18. A Spectra Mini has $1 \rightarrow 32$, $35 \rightarrow 82$ for a total of 80 programmable presets.

18.1 "MINI"

- 18.1.1. Max Zoom
 - 18.1.1.1. Analog 10
 - 18.1.1.2. Digital 8
- 18.1.2. Field of view: $46.4 \rightarrow 5.0^\circ$

The Query Reply for the Spectra MINI is more complex than expected.

1. **MINI 114R**: Note the mixture of blanks and NULs, it is, in hex:
4d 49 4e 49 20 31 31 34 00 00 00 00 00 00 00
2. **MINI 114R-X**: Note the mixture of blanks and NULs, it is, in hex:
4d 49 4e 49 20 31 31 34 52 58 00 00 00 00 00

1.1.25 Spectra MINI PAL, Query Responses

The reply to the query command consists of its marketing name (this one happens to be a PAL type of unit) which is null padded and it does not give out a serial number. It does not give an extended reply to additional software build data.

```

1 $Header: d:/DprotoDoc/RCS/MRev.dat,v 1.1 2007-11-13 10:49:17-08 Hamilton Exp Hamilton $
2 Spectra Mini, Rev 1.23
3 DCE      12      1.100139    1.079117 ff 01 00 45 00 00 46 Part number query
4                                     M I N I      1 1 4 R - X
5 DTE      19      1.114932    0.002073 ff 01 4d 49 4e 49 20 31 31 34 52 2d 58 00 00 00 01
6 DCE      37      2.251495    1.101227 ff 01 01 45 00 00 47 Serial number query
7                                     M I N I      1 1 4 R - X
8 DTE      44      2.266214    0.002087 ff 01 4d 49 4e 49 20 31 31 34 52 2d 58 00 00 00 02
9 DCE     185     12.619487    1.126122 ff 01 00 73 00 00 74 Software rev query
10 DTE     192     12.634248    0.002083 ff 01 00 74
11 DCE     196     13.770828    1.130343 ff 01 02 73 00 00 76 Build query
12 DTE     203     13.785538    0.002084 ff 01 00 76

```

The software rev level is returned by the diagnostic information request. (This readout is from a different camera than the preceding readout was made from.)

```

1 $Header: d:/DprotoDoc/RCS/mrev71.dat,v 1.1 2008-05-01 12:55:14-07 Hamilton Exp Hamilton $
2 Spectra Mini, Rev 1.23
3 DCE     1875     812.401611    1.140787 ff 01 00 6f 00 00 70 Diagnostic Information Query
4                                     1 . 2 3
5 DTE     1882     812.409717    0.001048 ff 01 00 71 60 01 31 2e 32 33 97

```

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