Table 1:  Message Header Record: Abaxis to Host

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 7.1.1 | Record Type ID | 1 | M | H | Header, Upper Case Only |
| 7.1.2 | Delimiter Definition | 4 | M | \| | Field delimiter, vertical bar, (0x7C) |
| | | | | \ | Repeat delimiter, backslash, (0x5C) |
| | | | | ^ | Component delimiter, caret, (0x5E) |
| | | | | & | Escape delimiter, ampersand, (0x26) |
| 7.1.3 | Message Control ID | 0 | N/U | NULL | Not Used |
| 7.1.4 | Access Password | 0 | N/U | NULL | Not Used |
| 7.1.5 | Sender Name or ID | 108 | M | | 105 Max Characters + 3 '^' delimiters |
| 7.1.5.1 | Manufacturer | 12 | | ABAXIS, INC. | Company Name |
| 7.1.5 2 | Analyser | 31 | | ABAXIS type text | Analyser Name:  "piccolo xpress" or "VetScan VS2" |
| 7.1.5.3 | Software Version | 31 | | XX.YY.ZZ.PP | Version Format<br><br>XX = Major Level<br><br>YY = Minor Level<br><br>ZZ = Issue fix/requirements update Level<br><br>PP = Patch Level (optional) |
| 7.1.5.4 | Serial Number | 31 | | Alphanumeric | serial number (alphanumeric) |
| 7.1.6 | Sender Street Address | 0 | N/U | NULL | Not Used |
| 7.1.7 | Reserved Field | 0 | N/U | NULL | Not Used |
| 7.1.8 | Sender Telephone Number | 0 | N/U | NULL | Not Used |
| 7.1.9 | Characteristics of Sender | 0 | N/U | NULL | Not Used |

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 7.1.10 | Receiver ID | 0 | N/U | NULL | Not Used |
| 7.1.11 | Comment or Special Instructions | 0 | N/U | NULL | Not Used |
| 7.1.12 | Processing ID | 1 | M | P | Production (patient sample) |
| | | | | D | Debugging (demo result) |
| 7.1.13 | Version No. | 9 | M | E 1394-97 | ASTM version number as specified in ASTM E1394-97 |
| 7.1.14 | Date and Time of Message | 14 | M | YYYYMMDDHHMMSS | ASTM specified date and time the message was constructed |

\* M = Mandatory; N/U = Not Used; O = Optional

Examples of Message Header Record:

```
H|¥^&|||ABAXIS, INC.^piccolo xpress^2.1.9^0000V0000D|||||||P|E 1394-97|20060131141502<CR>


H|¥^&|||ABAXIS, INC.^ piccolo xpress ^2.1.9^0000V0000D|||||||D|E 1394-97|20060303030303<CR>

H|¥^&|||ABAXIS, INC.^VetScan VS2^2.1.9^0000V0000D|||||||D|E 1394-97|20060917120649<CR>
```

Table 2:  Patient Record: Abaxis to Host

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 8.1.1 | Record Type | 1 | M | P | Patient, Upper Case Only |
| 8.1.2 | Sequence Number | 5 | M | 1 to 65535 | A sequence number consistent with sequence number rules. [normally 1] |
| 8.1.3 | Practice Assigned Patient ID | 14 | M | Alphanumeric | Patient ID or Control ID entered by operator.  If no ID is assigned, then "None" will be assigned by the analyzer._x000D_(up to 14 character ASCII alphanumeric) |
| 8.1.4 | Laboratory Assigned Patient ID | 14 | O | Alphanumeric | Sample ID_x000D_(up to 14 character ASCII alphanumeric) |
| 8.1.5 | Patient ID No. 3 | 14 | O | Alphanumeric | Alternate ID_x000D_(up to 14 character ASCII alphanumeric) |
| 8.1.6 | Patient Name | 0 | N/U | NULL | Not Used |
| 8.1.7 | Mother's Maiden Name | 0 | N/U | NULL | Not Used |
| 8.1.8 | Birthdate | 8 | O | ASCII | Date of Birth (DOB)_x000D_(8 ASCII character numeric; e.g. 19531009) |
| 8.1.9 | Patient Sex | 1 | O | M_x000D_F_x000D_U | Male or Neutered_x000D_Female or Spayed_x000D_Unspecified |

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 8.1.10 | Patient Race-Ethnic Origin | 2 | O | NULL<br><br>W<br><br>B<br><br>O<br><br>NA<br><br>H | Not Used / Unknown<br><br>White<br><br>Black<br><br>Asian/Pacific Islander<br><br>Native American/Alaskan Native<br><br>Hispanic |
| 8.1.11 | Patient Address | 0 | N/U | NULL | Not Used |
| 8.1.12 | Reserved Field | 0 | N/U | NULL | Not Used |
| 8.1.13 | Patient Telephone Number | 14 | O | ASCII | Patient Telephone Number<br><br>(up to 14 character ASCII alphanumeric) |
| 8.1.14 | Attending Physician ID | 0 | N/U | NULL | Not Used |
| 8.1.15 | Special Field 1 | 38 | O | Alphanumeric | "Owner/Admission ID^Patient Age^DOV"<br><br>Owner/Admission ID:<br>-  VetScan VS2:   Owner ID        up to 14 character<br>-  piccolo xpress : Admission ID  up to 14 character<br><br>Patient Age:<br>-  up to 14 character<br><br>DOV:<br>-  piccolo xpress: Last Vaccination<br>   (8 ASCII character numeric; e.g. 20060731) |
| 8.1.16 | Special Field 2 | 31 | M[1] | Alphanumeric | Reference Range Label |
| 8.1.17 | Patient Height | 0 | N/U | NULL | Not Used |
| 8.1.18 | Patient Weight | 0 | N/U | NULL | Not Used |
| 8.1.19 | Patient's Known or Suspected Diagnosis | 0 | N/U | NULL | Not Used |

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 8.1.20 | Patient Active Medications | 0 | N/U | NULL | Not Used |
| 8.1.21 | Patient's Diet | 0 | N/U | NULL | Not Used |
| 8.1.22 | Practice Field No. 1 | 0 | N/U | NULL | Not Used |
| 8.1.23 | Practice Field No. 2 | 0 | N/U | NULL | Not Used |
| 8.1.24 | Admission and Discharge Dates | 0 | N/U | NULL | Not Used |
| 8.1.25 | Admission Status | 0 | N/U | NULL | Not Used |
| 8.1.26 | Location | 14 | O | Alphanumeric | Location or Kennel Number |
| 8.1.27 | Nature of Alternative Diagnostic Code and Classifiers | 0 | N/U | NULL | Not Used |
| 8.1.28 | Alternative Diagnostic Code and Classification | 0 | N/U | NULL | Not Used |
| 8.1.29 | Patient Religion | 0 | N/U | NULL | Not Used |
| 8.1.30 | Marital Status | 0 | N/U | NULL | Not Used |
| 8.1.31 | Isolation Status | 0 | N/U | NULL | Not Used |
| 8.1.32 | Language | 0 | N/U | NULL | Not Used |
| 8.1.33 | Hospital Service | 0 | N/U | NULL | Not Used |
| 8.1.34 | Hospital Institution | 0 | N/U | NULL | Not Used |
| 8.1.35 | Dosage Category | 0 | N/U | NULL | Not Used |

* M = Mandatory; N/U = Not Used; O = Optional
[1] Mandatory unless Report Type 'X' (9.4.26)

Examples of Patient Record:

```
P|1|12345678901234|||||M||||20081231||||||||||||26421<CR>

P|1|655321||||||U|||||||Cat||||||||||3005<CR>

P|1|123-45-6789||||||F|NA||||||||||||||||15011<CR>

P|1|LEVEL VIII||||||U|||||||||||||||||<CR>

P|1|22222|44444|33333|||19990922|M||||77777||88888^7 Yrs.^20060228|Dog||||||||||66666<CR>
```

Table 3: Test Order Record: Abaxis to Host

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|------|-----------|-----------|-----------|----------------|------------------|
| 9.4.1 | Record Type ID | 1 | M | O | Order, Upper Case Only |
| 9.4.2 | Sequence Number | 5 | M | 1 to 65535 | A sequence number consistent with sequence number rules. |
| 9.4.3 | Specimen ID | 0 | N/U | NULL | Not Used |
| 9.4.4 | Instrument Specimen ID | 0 | N/U | NULL | Not Used |
| 9.4.5 | Universal Test ID | 75 | M[1] | | 72 Max Characters + 3 '^' delimiters |
| 9.4.5.1 | Universal Test ID | 0 | | NULL | Not Used |
| 9.4.5.2 | Universal Test ID Name | 0 | | NULL | Not Used |
| 9.4.5.3 | Universal Test ID Type | 0 | | NULL | Not Used |
| 9.4.5.4 | Manufacturer's or Local Code | 72 | | Alphanumeric | Disc name from print card, or IQC header (Battery test code for cancelled orders): Lot Number[1] |
| 9.4.6 | Priority | 0 | N/U | NULL | Not Used |
| 9.4.7 | Requested/ Ordered Date and Time | 14 | M[2] | YYYYMMDDHHMMSS | ASTM specified date and time the sample was run.[3] |
| 9.4.8 | Specimen Collection Date and Time | 0 | N/U | NULL | Not Used |
| 9.4.9 | Collection End Time | 0 | N/U | NULL | Not Used |
| 9.4.10 | Collection Volume | 0 | N/U | NULL | Not Used |
| 9.4.11 | Collector ID | 14 | O | Alphanumeric | Fourteen character alphanumeric Operator ID entered by operator |
| 9.4.12 | Action Code | 0 | N/U | NULL | Not Used |
| 9.4.13 | Danger Code | 0 | N/U | NULL | Not Used |
| 9.1.14 | Relevant Clinical Information | 0 | N/U | NULL | Not Used |
| 9.4.15 | Date/Time Specimen Received | 0 | N/U | NULL | Not Used |

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 9.4.16 | Specimen Descriptor | 0 | N/U | NULL | Not Used |
| 9.4.16.1 | Specimen Type | 0 | | NULL | Not Used |
| 9.4.16.2 | Specimen Source | 0 | | NULL | Not Used |
| 9.4.17 | Ordering Physician | 14 | O | Alphanumeric | Fourteen character alphanumeric Physician ID entered by operator |
| 9.4.18 | Physician 's Telephone Number | 0 | N/U | NULL | Not Used |
| 9.4.19 | Users Field No. 1 | 0 | N/U | NULL | Not Used |
| 9.4.20 | Users Field No. 2 | 0 | N/U | NULL | Not Used |
| 9.4.21 | Laboratory Field No. 1 | 0 | N/U | NULL | Not Used |
| 9.4.22 | Laboratory Field No. 2 | 0 | N/U | NULL | Not Used |
| 9.4.23 | Date/Time Results Reported or Last Modified | 0 | N/U | NULL | Not Used |
| 9.4.24 | Instrument Charge to Computer System | 0 | N/U | NULL | Not Used |
| 9.4.25 | Instrument Section ID | 0 | N/U | NULL | Not Used |
| 9.4.26 | Report Types | 1 | M | F | Final results (automatic transmission) |
| | | | | X | Order cannot be done, order cancelled |
| | | | | I | In Instrument, analysis started. |
| | | | | Y | No order on record |
| | | | | Z | No record of this patient (query response) |
| | | | | Q | Query response (record was requested by query) |
| 9.4.27 | Reserved Field | 0 | N/U | NULL | Not Used |
| 9.4.28 | Location or Ward of Specimen Collection | 0 | N/U | NULL | Not Used |
| 9.4.29 | Nosocomial Injection Flag | 0 | N/U | NULL | Not Used |
| 9.4.30 | Specimen Service | 0 | N/U | NULL | Not Used |

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 9.4.31 | Specimen Institution | 0 | N/U | NULL | Not Used |

* M = Mandatory; N/U = Not Used; O = Optional
[1] The Lot Number is mandatory unless Report Type 'X' then it is Optional
[2] Mandatory unless Report Type 'Z'
[3] The Order Date and Time sent from the Host may not be returned.  The returned value for completed orders will be the Analysis Run Date and Time to be consistent with prior implementations of the protocol by this device.   The returned value for canceled orders will be the Order Date and Time.

Examples of Test Order Record:

```
O|1|||^^^BASIC METABOLIC PANEL: 4400D||20040324083248||||69||||||87|||||||||Q<CR>

O|2|||^^^* QUALITY CONTROL REPORT *:  4400D||20040324083248||||69||||||87|||||||||Q<CR>

O|1|||^^^GENERAL CHEMISTRY 12: 1700D||20040326111909||||12345678901234||||||655321|||||||||F<CR>

O|1|||^^^METLYTE 8: 4300D||20040326101249||||22222222222222||||||22222222222222|||||||||Q<CR>

O|1|||^^^52||20040326101249||||22222222222222||||||22222222222222|||||||||X<CR>

O|1|||||||||||||||||||||||||||Z<CR>
```

Table 4: Result Record: Abaxis to Host

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 10.1.1 | Record Type ID | 1 | M | R | Result, Upper Case Only |
| 10.1.2 | Sequence Number | 5 | M | 1 to 65535 | A sequence number consistent with sequence number rules. |
| 10.1.3 | Universal Test ID | 38 | M | | LOINC Code or NULL, (Max Char. + 3 '^') |
| 10.1.3.1 | Universal Test ID | X | | Alphanumeric | LOINC Code for Chemistry results, NULL otherwise |
| 10.1.3.2 | Universal Test ID Name | 0 | | NULL | Not Used |
| 10.1.3.3 | Universal Test ID Type | 2 | | LN | "LN" for Chemistry results, NULL otherwise |
| 10.1.3.4 | Manufacturer's or Local Code | 33 - X | | Alphanumeric Free Text | LOINC "short name" for Chemistry results, Abaxis name otherwise |
| 10.1.4 | Data or Measurement Value | 7 | M | Alphanumeric | Supports same types and resolution as print card |
| 10.1.5 | Units | 7 | M | Alphanumeric | Common and SI units per ASTM & ISO Standard |
| 10.1.6 | Reference Ranges | 18 | O | Alphanumeric | Low Reference Range to High Reference Range |
| 10.1.6.1 | Reference Range | 18 | | | |
| 10.1.6.2 | Multiple Ranges | 0 | | | |
| 10.1.7 | Result Abnormal Flags | 1 | M | L | Below low normal |
| | | | | H | Above high normal |
| | | | | < | Below Dynamic Range |
| | | | | > | Above Dynamic Range |
| | | | | N | Within Normal Range |
| | | | | NULL | Result suppressed or Result with no reference range check |
| 10.1.8 | Nature of Abnormality Testing | 0 | N/U | NULL | Not Used |

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 10.1.9 | Result Status | 1 | M | F | Final results |
| | | | | R | Result was previously transmitted |
| 10.1.10 | Date of Change in Instrument Normative Values or Units | 0 | N/U | NULL | Not Used |
| 10.1.11 | Operator Identification | 0 | N/U | NULL | Not Used |
| 10.1.12 | Date/Time Test Started | 0 | N/U | NULL | Not Used |
| 10.1.13 | Date/Time Test Completed | 0 | N/U | NULL | Not Used |
| 10.1.14 | Instrument identification | 0 | N/U | NULL | Not Used |

* M = Mandatory; N/U = Not Used; O = Optional

Examples of Result Record:

```
R|8|2028-9^^LN^CO2 SerPl-sCnc|26|mmol/l|18 to 33|N||F<CR>

R|8|2028-9^^LN^CO2 SerPl-sCnc|26|mmol/l|18 to 33|N||R<CR>(Previous result when retransmitted)

R|2|3094-0^^LN^BUN SerPl-mCnc|15|mg/dl|7 to 22|N||F<CR>

R|1|^^^LEVEL 1: IQC 1|102||90 to 110|<CR>

R|3|2160-0^^LN^Creat SerPl-mCnc|<0.2*|mg/dl|0.6 to 1.2|<||F<CR>

R|9|^^^LEVEL 2: PRE|100||95 to 105|<CR>

R|5|2951-2^^LN^Sodium SerPl-sCnc|~~~|mmol/l|128 to 145||F<CR> (Final result suppressed)

R|2|3094-0^^LN^BUN SerPl-mCnc|3@|mg/dl|7 to 22|L||R<CR>

R|17|^^^LEVEL 2: 630 nm|100||95 to 105|<CR>

R|6|2823-3^^LN^Potassium SerPl-sCnc|<1.5*|mmol/l|3.6 to 5.1|<||F<CR>
```

R|6|13458-5^^LN^VLDLc SerPl Calc-mCnc|23c|mg/dl||||R<CR>

Table 5:  Comment Record: Abaxis to Host

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|------|-----------|-----------|-----------|----------------|-------------------|
| 11.1.1 | Record Type ID | 1 | M | C | Comment, Upper Case Only |
| 11.1.2 | Sequence Number | 5 | M | 1 to 65535 | A sequence number consistent with sequence number rules. |
| 11.1.3 | Comment Source | 1 | M | I | Comments are only from analyser |
| 11.1.4 | Comment Text | 99 | M | | |
| | Unused | | | Null | Not Used |
| | Code | | | Alphanumeric Code | Error Flags or Codes |
| | Text | | | Alphanumeric Text | Free flowing text |
| 11.1.5 | Comment Type | 1 | M | G | Generic/Free text comment |
| | | | | I | Instrument Flag Comment |

* M = Mandatory; N/U = Not Used; O = Optional

Examples of Comment Record:

```
C|1|I|^^INST QC: OK    CHEM QC: OK|G<CR>

C|2|I|^^HEM:  181  LIP:  301  ICT:   12|G<CR>

C|3|I|^^@ CONFIRM LOW RECOVERIES @|G<CR>

C|4|I|^^Unauthorized Operator|G<CR>

C|4|I|^^Operator Renewal Required|G<CR>

C|5|I|^^Control Renewal Required|G<CR>

C|1|I|^^CHEMISTRY QC:            0|G<CR>

C|2|I|^^ACCEPTABLE MINIMUM:    50|G<CR>

C|1|I|42BF 0000^0E00 0000^Hemolysis Limit Error|I<CR>

C|1|I|3F66 6666^0600 0000^Lipemic Limit Error|I<CR>

C|1|I|42CD 22B7^0000 0001^Chemistry Specific Error|I<CR>

C|1|I|461C 4000^0008 0000^Concentration > High System Limit|I<CR>

C|1|I|41CC 0000^0020 0080^False Rate (Unexpected Reaction Occurred)|I<CR>

C|1|I|41DE 6666^0000 0200^@ CONFIRM LOW RECOVERIES @|I<CR>

C|1|I|^0000 0002^Run Count¥^0000 0002^Abort Count|I<CR>

C|5|I|^0000 0000^Empty Cuvette Flags¥^0000 0000^Distribution Check Flags|I<CR>

C|7|I|^4055^BARCODE ERROR|I<CR>
```

Table 6:  Message Terminator Record: Abaxis to Host

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|------|------------|------------|-----------|----------------|------------------|
| 13.1.1 | Record Type ID | 1 | M | L | Message Terminator, Upper Case Only |
| 13.1.2 | Sequence Number | 5 | M | 1 to 65535 | A sequence number consistent with sequence number rules. [always 1] |
| 13.1.3 | Termination Code | 1 | M | N<br><br>I | Normal termination<br><br>No information available for last query |

* M = Mandatory; N/U = Not Used; O = Optional

Examples of Message Terminator Record:

L|1|N<CR>

L|1|I<CR>

Table 7:  Manufacturer Record: Abaxis to Host

| ASTM | Field Name | Max Length | Required* | Field Contents | Field Description |
|---|---|---|---|---|---|
| 15.1.1 | Record Type ID | 1 | M | M | Manufacturer, Upper Case Only |
| 15.1.2 | Sequence Number | 5 | M | 1 | A sequence number consistent with sequence number rules. [always 1] |
| | Record Identifier | 2 | M | AS | AS = Analyzer Status |
| | Analyzer Status | 1 | M | 0 | Not Ready |
| | | | | 1 | Ready |
| | | | | 2 | Busy |

* M = Mandatory; I = Ignored; O = Optional

Example of Message Terminator Record:

```
M|1|AS|0<CR>
M|1|AS|1<CR>
M|1|AS|2<CR>
```