AXEL Platine Terminal
Asynchronous AX3000 Models

User's Guide

- 1 -
PLATINE TERMINAL SET-UP

This chapter describes the features and use of the AXEL Platine terminal set-up mode.

1.1 - GENERAL FEATURES

1.1.1 - Enter Set-Up Mode

The following key sequences put the Platine terminal in set-up mode:

In set-up mode, the active keystrokes are:
- **<F1>** to **<F7>**: select a set-up screen
- **<F8>**: cancel modifications
- **<F9>**: restore saved set-up
- **<F10>**: enter predefined set-up
- **<F11>, <F12>** or **<ESC>**: exit set-up
- **Vertical arrow keys**: select a parameter from a set-up screen
- **<SPACE>**: modify a parameter value
- **<RETURN>**: select a parameter value

1.1.2 - Set-Up Screens

The Platine terminal set-up is based on selectable displays, here called set-up screens. Each set-up screen is associated with a function key:
- **<F1>**: Screen
- **<F2>**: Keyboard

- **<F3>**: Main Port
- **<F4>**: Auxiliary Ports
- **<F5>**: Terminal Modes
- **<F6>**: Tabulations
- **<F7>**: Function Keys

Each set-up screen displays a list of features and lets you select or modify those features. Vertical arrow keys are used to select a feature and the spacebar is used to change the feature value.

1.1.3 - Predefined Set-Up

AXEL's built-in, predefined set-ups automatically set all standard terminal parameters to match the selected operating system.

Press the **<F10>** function key to use this feature. Then select the appropriate operating system.

The use of predefined set-ups ensures a **fast** and **reliable** installation.

1.1.4 - Exit Set-Up

You can exit set-up mode in either of two ways:
- **<F11> or <Esc>** (exit without saving): the modifications are stored until the terminal is switched off. The last saved set-up (<F12>) will be used when the terminal is next switched on.
- **<F12>** (exit and save): the modifications are stored in non-volatile memory and applied when the terminal is next switched on.

1.2 - SCREEN

This set-up screen is used to define monitor display characteristics. It is the first screen to appear when you enter set-up mode or can be reached from any other screen in set-up mode by pressing the **<F1>** key:

```
        A X E L   T E R M I N A L   S E T U P

   F1  SCREEN                    F8  CANCEL MODIFICATIONS
   F2  KEYBOARD                  F9  RESTORE SAVED SETUP
   F3  MAIN PORT                 F10 PREDEFINED SETUP
   F4  AUXILIARY PORTS           F11 EXIT WITHOUT SAVING
   F5  TERMINAL MODES            F12 EXIT AND SAVE
   F6  TABULATIONS
   F7  FUNCTION KEYS             Alt+F1     REVISION DISPLAY


        Screen                   Color
        Number of Lines          24 + 1 Message Line
        Number of Columns        80
        Scrolling                Yes
        Wrap End of Line         No
        CR = CR+LF               No
        Cursor                   Underline
        Overscan Color           No
        Screen Saver             No
        Number of Multiscreen Views   8 Views, 1 Page per View

    ▼  ▲ : Parameter Selection      SPACE : Change Parameter Value
```

Note: this screen is for example only. Fields may be set to other values.

1.2.1 - Screen Field

This field sets the type of VGA monitor. Four values are available:
- **Color**,
- **Grey Levels** (for displaying color applications on a black and white VGA monitor),
- **Black and White**,
- **Paper White** (white background and black foreground).

1.2.2 - Number of Lines Field

Two values are available:
- **25 Lines**: one 25-line screen region.
- **24 + 1 Message Line**: 2 screen regions. The first region has 24 data lines, the second one has 1 data line. An escape sequence is used to select either of these two independent regions as the main display.

1.2.3 - Number of Columns Field

Two values are available:
- **80** columns,
- **132** columns.

1.2.4 - Scrolling Field

Two values are available:
- **Yes**: a character received after the text cursor has reached the bottom margin automatically scrolls the display upwards.
- **No**: any character received after the text cursor has reached the bottom margin overwrites the first character position of the first line.

1.2.5 - Wrap End of Line Field

Two values are available:
- **Yes**: a character received after the text cursor has reached the right margin automatically appears in the first character position of the next line.
- **No**: a character received after the text cursor has reached the right margin overwrites the last character position of the current line.

1.2.6 - CR = CR+LF Field

Two values are available:
- **Yes**: the carriage-return character (ASCII 0Dhex) is mapped to a carriage-return plus a line-feed character (ASCII 0Dhex plus 0Ahex).
- **No**: no specific processing when the carriage-return character (ASCII 0Dhex) is received.

1.2.7 - Cursor Field

Three blinking cursor styles are available:
- **Line**,
- **Half-block**,
- **Block**.

1.2.8 - Overscan Color Field

Two values are available:
- **No**: no overscan (black color).
- **Yes**: the overscan color is selected from 64 choices. Use **<+>** and **<->** keys to select the desired overscan color. The hexadecimal value of the selected overscan color (between 00hex and 3Fhex) is displayed.

1.2.9 - Screen Saver Field

If the terminal is inactive for a predefined number of minutes, the screen saver feature automatically turns off the monitor display, although the monitor remains powered-up. This protects the monitor from damage from "screen burn". Three values are available:
- **no**: screen saver feature not used. Note that, by selecting this option, the life of the monitor may be reduced.
- **xx minutes**: the display is turned off after xx minutes. The display is restored when either the keyboard is used or data is received.
- **xx minutes keyboard only**: the display is turned off after xx minutes. The display is only restored when the keyboard is used.

Note: to enable the screen saver, enter the number of minutes and confirm.

1.2.10 - Number of Views Multiscreen Field

This field only appears when VT220 emulation or one of the ANSI emulations is selected. This field indicates the number of views and pages currently in use on the Platine terminal.

The number of views multiscreen is:
- **1** to **8 views** (with 1 page per view) or
- **4 views** (2 pages per view).

1.3 - KEYBOARD

This set-up screen is used to define keyboard characteristics. It appears when you press the **<F2>** key within set-up mode:

```
             A X E L   T E R M I N A L   S E T U P

    F1  SCREEN                    F8  CANCEL MODIFICATIONS
    F2  KEYBOARD                  F9  RESTORE SAVED SETUP
    F3  MAIN PORT                 F10 PREDEFINED SETUP
    F4  AUXILIARY PORTS           F11 EXIT WITHOUT SAVING
    F5  TERMINAL MODES            F12 EXIT AND SAVE
    F6  TABULATIONS
    F7  FUNCTION KEYS             Alt+F1     REVISION DISPLAY


        Keycodes                  ASCII
        Character Set             PC international (437)
        National Keyboard         French
        "Backspace" Key Value     BS (08h)
        "." Key Value (Numeric Pad)    .

        "Num" Led Initialization  Off
        Beep                      Long
        Repetition Key Delay      Medium (500 ms)
        Repetition Key Rate       Medium

     ▼  ▲ : Parameter Selection    SPACE : Change Parameter Value
```

Note: this screen is for example only. Fields may be set to other values.

1.3.1 - Keycodes Field

A keyboard may be monitored in two ways:
- **ASCII**: in this mode, one or more characters are sent per keystroke. For example, the ASCII character 'a' (61hex) is sent when you press the <A> key on its own and the ASCII character 'A' (41hex) is sent when you press the <Shift> and <A> keys simultaneously. This is a very simple method of monitoring. However it leaves some keys (for example <Shift> and <Alt>) 'dumb' and useless when they are pressed on their own.

- **Scancode**: Different characters may be sent when the key is depressed and when it is released. These characters are determined by the location and the state (up or down) of the key. The mapping, between a key location and an ASCII character, is done by the host computer. In scancode mode **all** the keys can be used, both alone and in combinations.

1.3.2 - Character Set Field

The character set to be used is selected through this field (refer to Appendix A.2). The available character sets depend on the current emulation:

	Selected Emulation			
	ANSI	VT220	SM94xx	other
PC International (437)	✓		✓	
PC Multilingual (850)	✓		✓	
PC Portuguese (860)	✓		✓	
ISO Latin (8859)	✓			
ISO Latin (8859-SG): ISO 8859 character set plus 64 characters issued from the code page 437.	✓			
National 7-bit: 7-bit character set. Some characters of this character set depend on the national keyboard (refer to Appendix A.2).	✓	✓	✓	✓
DEC Multinational		✓		
SM9400		✓	✓	

1.3.3 - National Keyboard Field

This field appears when ASCII mode is selected (refer to the description of the 'Keycodes' Field). With ASCII mode, it is necessary to set the keyboard language because the terminal needs to associate a key with a letter. (For example, the letter <A> is not located in the same place, on a French keyboard, as on a Spanish keyboard).

Eleven national keyboards are available (refer to Appendix A.1). When you press **<SPACE>**, the following list appears. Use the vertical arrow keys and **<RETURN>** to select a language).

```
U.S.
U.K.
French
German
Spanish
Swiss (Ge)
Swiss (Fr)
Belgium
Italian
Portuguese
Dutch
```

1.3.4 - "Backspace" Key Value Field

This field only appears when ASCII mode is selected (refer to the description of the 'Keycodes' Field). It permits a choice of ASCII character to be mapped to the backspace key. Two values are available:
- **BS (08hex)**,
- **DEL (7Fhex)**.

1.3.5 - "." Key Value Field

This field only appears when ASCII mode is selected (refer to the description of the 'Keycodes' Field). It permits a choice of ASCII character to be mapped to the '.' key on the numeric keypad. Two values are available:
- **.** (dot: 2Ehex),
- **,** (comma: 2Chex).

1.3.6 - CAPS Key Mode Field

This field only appears when ASCII mode is selected (refer to the description of the 'Keycodes' Field). It sets the CAPS LOCK to behave in one of two alternative ways:
- **Caps Lock:** only the alphabetical keys are affected. If the <Shift> key is not used the upper case letter is sent when an alphabetic key is pressed and the unshifted (lower) character is sent by other keys. When the <Shift> key is held down, pressing an alphabetic key sends the corresponding lower case letter but pressing a non-alphabetic key sends the corresponding shifted (upper) character. To unlock this mode press the <CAPS> key.
- **Shift Lock:** all the keys send either the corresponding upper case letter or the shifted (upper) character. To unlock this mode press a <Shift> key.

1.3.7 - Compose Accentuate Characters Field

This field only appears when ASCII mode is selected (refer to the description of the 'Keycodes' Field) and when the character set selected is not 'ISO 7-bit'.

To get diacritical characters two keystrokes are needed. The first one is the introducer (^, ~, ¨, etc.) and the second one is the character itself (a, n, y, etc.).

This set-up parameter allows to set this feature. Three values are available:
- **no**: no specific processing is done for the introducer character
- **local**: composite characters are locally process by the AX3000
- **remote**: a special ASCII code is associated with each introducer character. These special ASCII codes allow the operating system to process composite characters (see `mapchan` on SCO UNIX)

For more information refer to Appendix A.4.

1.3.8 - 'Num' LED Initialization Field

Light the NUM Keyboard LED when the AX3000 is switched on. Two values:
- **On**,
- **Off**.

1.3.9 - Beep Field

The terminal is able to sound a bell. This field allows the bell to be enabled or disabled and sets the duration of the bell sound:
- **No**: no bell,
- **Short**: 10 millisecs approx.,
- **Long**: 40 millisecs approx.

1.3.10 - Repetition Key Delay Field

Select the automatic repetition delay when a key is held down. This is the delay before the key starts to auto-repeat:
- **Low (250 millisecs)**,
- **Medium (500 millisecs)**,
- **High (1 second)**.

1.3.11 - Repetition Key Speed Field

Select the automatic repetition speed when a key is held down:
- **low**,
- **medium**,
- **high**.

1.4 - MAIN PORT

This set-up screen is used to configure the main port. It appears when you press **<F3>** key within set-up mode:

```
             A X E L   T E R M I N A L   S E T U P

   F1  SCREEN                    F8  CANCEL MODIFICATIONS
   F2  KEYBOARD                  F9  RESTORE SAVED SETUP
   F3  MAIN PORT                 F10 PREDEFINED SETUP
   F4  AUXILIARY PORTS           F11 EXIT WITHOUT SAVING
   F5  TERMINAL MODES            F12 EXIT AND SAVE
   F6  TABULATIONS
   F7  FUNCTION KEYS             Alt+F1     REVISION DISPLAY


      Baud Rate                  38400 bauds

      Data Format                8 Bits, 1 Stop, No Parity

      Handshake                  XON / XOFF (11h/13h)




   ▼ ▲ : Parameter Selection          SPACE  : Change Parameter Value
```
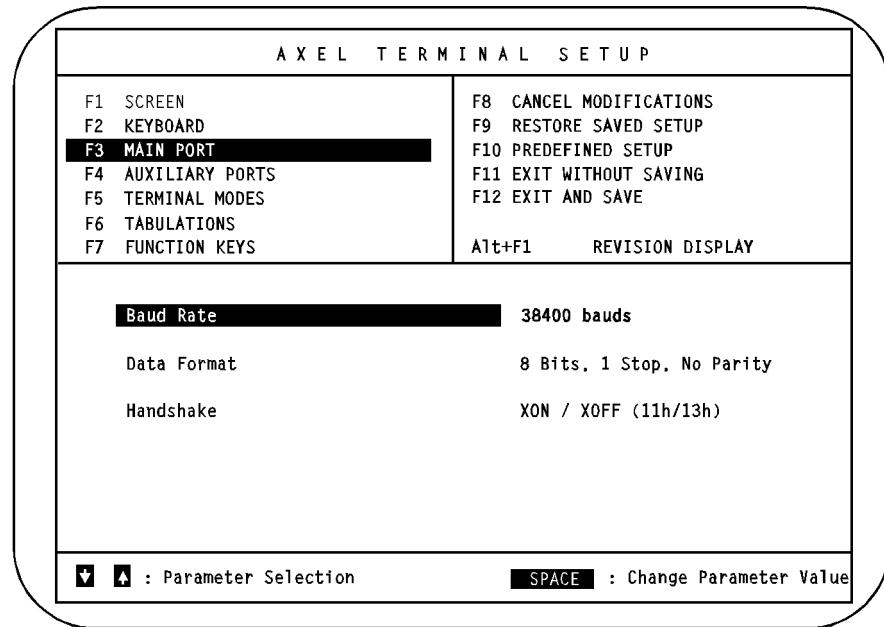
Note: this screen is for example only. Fields may be set to other values.

1.4.1 - Baud Rate Field

This field is used to set the baud rate between the host computer and the Platine terminal. When you press **<SPACE>** the following list appears. Use the vertical arrow keys and the **<RETURN >** key to select a baud rate:

```
    300
   1200
   2400
   4800
   9600
   9200
  38400
  57600
 115200
```

Note: 57.6 Kbaud and 115.2 Kbaud speeds are not available with any current models of Platine terminal.

1.4.2 - Data Format Field

This field is used to select the format of data bytes transferred between the host computer and the Platine terminal. When you press **<SPACE>** the following list appears. Use the vertical arrow keys and the **<RETURN >** key to select a baud rate:

```
7 Bits, 1 Stop, No parity
7 Bits, 1 Stop, Even Parity
7 Bits, 1 Stop, Odd Parity
8 Bits, 1 Stop, No parity
8 Bits, 1 Stop, Even Parity
8 Bits, 1 Stop, Odd Parity
```

1.4.3 - Handshake Field

Handshaking can be accomplished either by hardware (known as DTR because it changes the voltage on the DTR pin) or software (either XON/XOFF or XPC).

Press **<SPACE>** to display the handshake list. Use the vertical arrow keys and the **<RETURN>** key to select the required handshake:

```
None
DTR
XON/XOFF (11h/13h)
XPC (65h/67h)
```
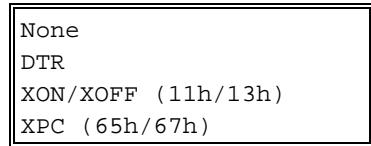
1.5 - AUXILIARY PORTS

This set-up screen is used to configure the serial or parallel auxiliary ports for use with a printer or other device. It appears when you press the **<F4>** key in set-up mode:

```
                    S E T U P   T E R M I N A L   A X E L

        F1  SCREEN                      F8  CANCEL MODIFICATIONS
        F2  KEYBOARD                    F9  RESTORE SAVED SETUP
        F3  MAIN PORT                   F10 PREDEFINED SETUP
        F4  AUXILIARY PORTS             F11 EXIT WITHOUT SAVING
        F5  TERMINAL MODES              F12 SAVE AND EXIT
        F6  TABULATIONS
        F7  FUNCTION KEYS               Alt+F1     DISPLAY REVISION


           Default Printer Port           Parallel Port

           Serial Port Use                Printer
           Serial Port Set-Up
              Baud Rate                   9600 bauds
              Data Format                 8 Bit, 1 Stop, No Parity
              Handshake                   XON / XOFF (11h/13h)

           Printer Monitoring             Standard
           End Transparent Mode Sequence  ESC [4i

        ▮ ▮ : Parameter Selection         SPACE  : Change Parameter Value
```

Note: this screen is for example only. Fields may be set to other values.

1.5.1 - Default Printer Port Field

Either of the two ports (serial or parallel) may be designated as the default printer port. Two available values:
- **Serial Port** or
- **Parallel Port**.

1.5.2 - Serial Port Use Field

The three available uses of the serial port are:
- **Mouse**: monitoring a MicroSoft-compatible mouse. Only mouse events are transmitted to the host computer. The mouse movement is locally monitored by the Platine terminal.
- **Printer**: Data flow takes place only from the Platine terminal to the serial peripheral. This option is not suitable for printers (e.g. PostScript printers) which require bi-directional data flow.
- **Send/Receive**: bi-directional communication. Used to control peripherals such as bar code readers, touch screens and printers that require bi-directional data flow

Selection of one of these functions initially sets the serial port to the default factory configuration for that use. Thereafter serial port parameters may be adjusted individually.

1.5.3 - Baud Rate Field

This field is used to set the baud rate between the Platine terminal and the serial peripheral. When you press **<SPACE>** the following list appears. Use the vertical arrow keys and the **<RETURN >** key to select a baud rate:

```
    300
   1200
   2400
   4800
   9600
   9200
  38400
  57600
 115200
```

Note: 57.6 Kbaud and 115.2 Kbaud speeds are not available with any current models of Platine terminal.

1.5.4 - Data Format Field

This field is used to select the format of data bytes transferred between the Platine terminal and the serial peripheral. When you press **<SPACE>** the following list appears. Use the vertical arrow keys and the **<RETURN >** key to select a baud rate:

```
7 Bits, 1 Stop, No parity
7 Bits, 1 Stop, Even Parity
7 Bits, 1 Stop, Odd Parity
8 Bits, 1 Stop, No parity
8 Bits, 1 Stop, Even Parity
8 Bits, 1 Stop, Odd Parity
```

1.5.5 - Handshake Field

Handshaking can be accomplished either by hardware (known as DTR because it changes the voltage on the DTR pin) or software (either XON/XOFF or XPC).

Press **<SPACE>** to display the handshake list. Use the vertical arrow keys and the **<RETURN>** key to select the required handshake:

```
None
DTR
XON/XOFF (11h/13h)
XPC (65h/67h)
```

1.5.6 - Test Device Presence Field

Software handshaking (XON/XOFF or XPC) does not test whether the peripheral is present. Data is lost if the peripheral is not present or switched off. This field enables this test to be performed so that data is only sent when the peripheral is ready.

Two values are available:
- **No**: the test is not performed,
- **CTS**: the CTS signal is used to perform this test.

Notes: - When enabling device presence testing, check your cable (refer to *Installation Guide*) to ensure that the CTS pin is connected.
- Do not use this test with DTR handshaking.

1.5.7 - Printer Monitoring Field

AXEL has designed a proprietary solution which permits local printer use without affecting simultaneous use of the terminal. To use this feature, the Platine AX3000 must be connected to an AXEL Multi I/O board. Three printer monitoring modes are available:
- **Standard**,
- **AXEL**,
- **Prologue** (according to the emulation).

For more information, refer to the documentation for the AXEL Multi I/O boards (V605 and V610).

1.5.8 - End Transparent Mode Sequence Field

Display data and printer data are sent from the host computer to the main terminal serial port. The terminal identifies the data as printer information when it is preceded with a 'Start Transparent Mode Sequence' escape code and ended by an 'End Transparent Mode Sequence' escape code.

For greater convenience, it is possible to enter the 'End Transparent Mode Sequence' code from the terminal keyboard. This field indicates the ASCII character string required. The first character is always the Esc character (1Bhex).

1.6 - TERMINAL MODES

This set-up screen is used to define the terminal modes. It appears when you press the **<F5>** key in set-up mode:

```
            A X E L   T E R M I N A L   S E T U P

    F1  SCREEN                  F8  CANCEL MODIFICATIONS
    F2  KEYBOARD                F9  RESTORE SAVED SETUP
    F3  MAIN PORT               F10 PREDEFINED SETUP
    F4  AUXILIARY PORTS         F11 EXIT WITHOUT SAVING
    F5  TERMINAL MODES          F12 EXIT AND SAVE
    F6  TABULATIONS
    F7  FUNCTION KEYS           Alt+F1     REVISION DISPLAY


        Mode                        Full Duplex

        Monitor Mode                No

        SETUP Language              US

        Emulation                   VT220
           Working Options          Intensity
        Host Programmable Terminal Parameters  Yes
        Video Attribute Coloring Mode          No

    ▼ ▲ : Parameter Selection      SPACE : Change Parameter Value
```

Note: this screen is for example only. Fields may be set to other values.

1.6.1 - Mode Field

This field sets the kind of communication used by the Platine terminal:
- **Full Duplex**: enables bi-directional communication. Characters entered at the keyboard are sent to the host computer and the Platine terminal processes and displays data received from the host.
- **Local**: enables uni-directional communication. Characters entered at the keyboard are locally processed and displayed by the Platine terminal. The Platine terminal processes and displays data received from the host.

1.6.2 - Monitor Mode Field

The monitor mode is used to examine the data received by the AX3000:
- **No**: monitor mode disabled.
- **Yes, Hexadecimal Value**: monitor mode is enabled and displays the hexadecimal value of received ASCII characters.
- **Yes, Symbols**: monitor mode is enabled and displays the received ASCII characters themselves.

1.6.3 - SETUP Language Field

This field selects the language used to display set-up screens. Two languages are available:
- **English**,
- **National** (depending on the firmware: **French, German, Spanish, Portuguese**)

1.6.4 - Emulation Field

This field sets the emulation. The following emulations are available. Press **<SPACE>** to display the emulation list. Use the vertical arrow keys and the **<RETURN>** key to select the required emulation:

```
PROLOGUE 2/3
PROLOGUE 4/5
TWIN SERVER
ANSI
ANSI DOS
UNIX SCO 3.2.2
UNIX SCO 3.2.4
SCO OPENSERVER
XENIX SCO
UNIX SVR4
ANSI INTERACTIVE
ANSI RS 6000
ANSI MOS
PCTERM
PCTERM THEOS
OS2 POLYMOD2
VT220
SM9400
SM9412
```

The best way to select the required emulation is to use the 'Predefined Set-Up' screen (**<F10>** key). All terminal parameters are then automatically set for the selected emulation.

1.6.5 - Working Option Field

This field only appears when VT220 emulation or one of the ANSI emulations is selected.

This parameter controls the use of the intensity VGA attribute. Four values:
- **Intensity**: standard mode

- **Character Down-Loading**: the bold attribute cannot be used because it is used to control the down-loaded characters
- **Underline**: the bold attribute cannot be used because it is used to control the underline attribute (in standard mode, only a monochrome VGA monitor handles the underline attribute)
- **Double Size Characters**: the bold attribute cannot be used because it is used to control the character size.

1.6.6 - Host Programmable Terminal Parameters Field

Many terminal parameters can be set from the host computer by use of escape sequences (for further information, refer to Chapter 3). This feature may be prohibited to avoid undesirable side-effects:
- **Yes**: terminal parameters can be set with escape sequences,
- **No**: terminal parameter escape sequences are not processed by the Platine terminal.

1.6.7 - Video Attribute Coloring Mode Field

The embedded coloring feature allows color display of monochrome applications. The Platine terminal performs the coloring process by generating a background color and a foreground color for each monochrome character attribute or graphics character.

This field enables or disables the coloring feature:
- **No**: disable coloring feature,
- **Yes (press <RETURN> to set colors)**: enable coloring feature. The background color, plus a foreground color for each monochrome character attribute or graphics character, are set through the Coloring Mode Set-Up screen.

Press the **<RETURN>** key to display the Coloring Mode Set-Up screen:

```
                    A X E L   T E R M I N A L   S E T U P

        F1  SCREEN                    F8  CANCEL MODIFICATIONS
        F2  KEYBOARD                  F9  RESTORE SAVED SETUP
        F3  MAIN PORT                 F10 PREDEFINED SETUP
        F4  AUXILIARY PORTS           F11 EXIT WITHOUT SAVING
        F5  TERMINAL MODES            F12 EXIT AND SAVE
        F6  TABULATIONS
        F7  FUNCTION KEYS             Alt+F1     DISPLAY REVISION


          Normal                     AbCdEfG             Foreground

          Reverse                    AbCdEfG

          Underline                  AbCdEfG

          Graphic characters         ┌┴┐

          Default                    AbCdEfG


     ▼ ▲ : Attribute Selection + - : Colors  SPACE : Foregr./Backgr. Echap : Exit
```
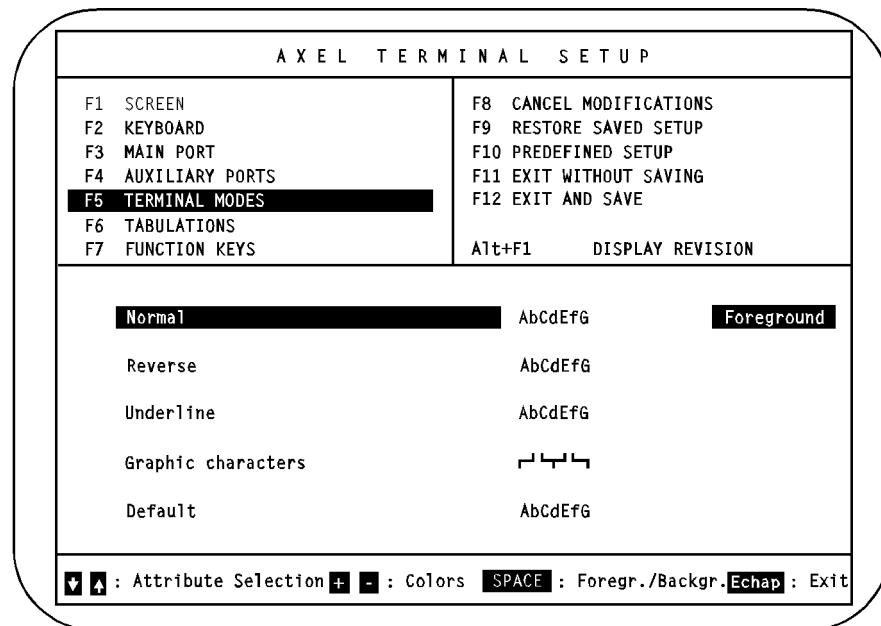
Note: This screen is for example only. Fields may be set to other values.

The 5 coloring attributes are:

- **Normal:**   no video attribute.
- **Reverse:**   the reverse video attribute
- **Underline:**   the underline video attribute
- **Graphics Character:**   VT220 Emulation: for the 'DEC Special Graphics' character set, characters in the range 6Ah to 78h.
others: for the 437, 850 and 860 character sets, characters in the range B0h to DFh. For the 8859 character set, characters in the range 80h to 9Fh
- **Default:**   specific attribute for Prologue 2/3 operating systems.

Use the vertical arrows keys to select a coloring attribute. The **<SPACE>** key is used to change the color (foreground and background). **<+>** and **<->** keys are used to select the color (up to 8 colors for the background, up to 16 colors for the foreground).

Use the **<Esc>** key to return to the previous set-up screen.

1.7 - TABULATIONS

This set-up screen is used to set the Platine terminal's tab stop spacings. It appears when you press the **<F6>** key in set-up mode:

```
              A X E L   T E R M I N A L   S E T U P

      F1  SCREEN                    F8   CANCEL MODIFICATIONS
      F2  KEYBOARD                  F9   RESTORE SAVED SETUP
      F3  MAIN PORT                 F10  PREDEFINED SETUP
      F4  AUXILIARY PORTS           F11  EXIT WITHOUT SAVING
      F5  TERMINAL MODES            F12  EXIT AND SAVE
      F6  TABULATIONS
      F7  FUNCTION KEYS             Alt+F1     DISPLAY REVISION



          10        20        30        40        50        60        70

      .......▲.......▲.......▲.......▲.......▲.......▲.......▲.......▲......




      ◄  ► : Move Cursor Left/Right      SPACE  : Set/Clear Tab Stop
```
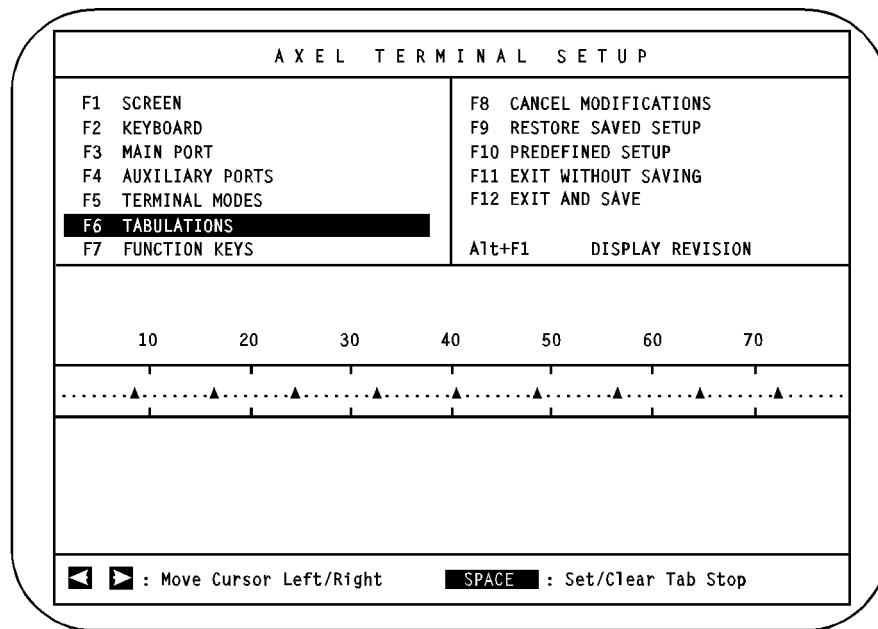
Note: This screen is for example only. Fields may be set to other values.

Use the horizontal arrow key to move the field cursor. Press **<SPACE>** to set or clear a tab stop.

By default tab stops are set at every eighth character column. There is one tab stop field for each column on the screen display. The screen display can be 80 or 132 columns wide, depending on the number of columns set (see the Number of Columns Field in the Screen Set-Up screen).

1.8 - FUNCTION KEYS

This set-up screen is used to define the values generated by the function keys. Function keys can only be user-defined in ASCII mode. It appears when you press the **<F7>** key in set-up mode:

```
         A X E L   T E R M I N A L   S E T U P

                        WARNING  !
        User defined function key feature is not avaible in scancode mode.
           32 characters maximum per key, 255 character maximum.
                    F1  = Default Value for Highlighted Function Key
                    F2  = Default Value for All Function Keys
                    ESC = Exit


             F1      = →[M
             F2      = →[N
             F3      = →[O
             F4      = →[P
             F5      = →[Q
             F6      = →[R
             F7      = →[S
             F8      = →[T
             F9      = →[U
             F10     = →[V

        ⬇ ⬆ : Parameter Selection        SPACE : Change Parameter Value
```
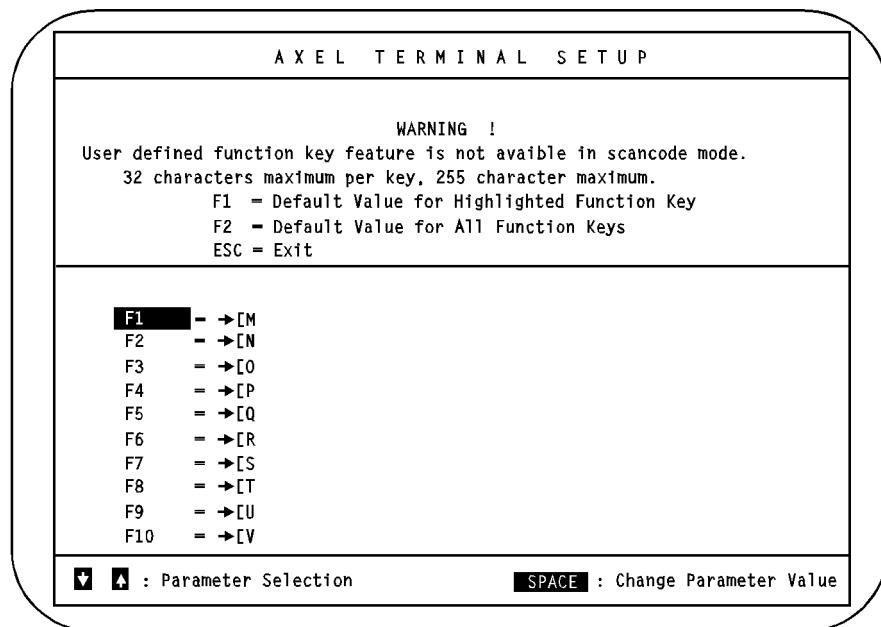
Note: This screen is for example only. Fields may be set to other values.

The programmable key list applies only to the selected emulation. The list includes the function keys (used alone or in combination with **<Alt>**, **<Ctrl>** or **<Shift>** keys) and the keypad keys.

Use the vertical arrow keys to select the function (or keypad) key required. Press **<SPACE>** to change the key value. Enter the function key string. All ASCII characters are available (from 00hex to FFhex).

Note: to enter a character by its ASCII code, press <Alt>, enter the **decimal** ASCII code from the numeric keypad and then release the <Alt> key.

The following three control keys are available:
- **<F4>**: save modifications.
- **<F5>**: restore previous value.
- **<F6>**: backspace.

Note:
- When a predefined set-up is selected, function keys are set to default values (for more information, refer to Appendix A.3).
- Do not exceed 32 characters, maximum, per function key string.
- Do not exceed 255 characters, in total, to encode all the function key strings.

1.9 - CANCEL MODIFICATIONS

Pressing the **<F8>** key while in set-up mode cancels all modifications made since you entered set-up mode. Confirmation is required (use **<RETURN >** and **<SPACE>** keys).

1.10 - RESTORE SAVED SETUP

Pressing the **<F11>** key while in set-up mode restores the last set-up to have been saved with the **<F12>** key. Confirmation is needed (use **<RETURN >** and **<SPACE>** keys).

1.11 - PREDEFINED SET-UP

Press the **<F10>** key to select the required Predefined Set-Up:

```
PROLOGUE 2/3
PROLOGUE 4/5
TWIN SERVER
ANSI
ANSI DOS
UNIX SCO 3.2.2
UNIX SCO 3.2.4
SCO OPENSERVER
XENIX SCO
UNIX SVR4
ANSI INTERACTIVE
ANSI RS 6000
ANSI MOS
PCTERM
PCTERM THEOS
OS2 POLYMOD2
VT220
SM9400
SM9412
```
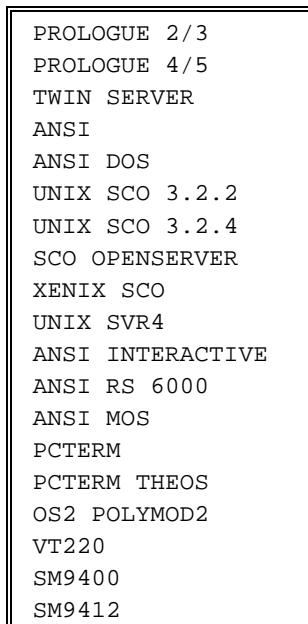
Use the vertical arrow keys and the **<RETURN >** key to select the predefined set-up.

The predefined set-up selection resets all terminal parameters to the predefined set-up default values. Any subsequent adjustment to terminal parameters can then be made using the appropriate set-up screens, accessed through the **<F1>** to **<F7>** keys.

Note: this menu appears when the Platine terminal is switched on for the first time. It should be used to select the correct operating system. Having completed this selection, remain in set-up mode to adjust other parameters as required.

1.12 - EXIT WITHOUT SAVING

Press the **<F11>** key to exit set-up mode without saving modifications. Confirmation is required (use **<RETURN >** and **<SPACE>** keys).

After exiting set-up mode with this command, all modifications to the state of the Platine terminal will be retained, but only until the terminal is switched off.

1.13 - SAVE AND EXIT

Press the **<F12>** key to exit set-up mode and save modifications. Confirmation is required (use **<RETURN >** and **<SPACE>** keys).

After exiting set-up mode with this command, all modifications to the state of the Platine terminal will be retained, even after the terminal is switched off.

1.14 - DISPLAY REVISION

Press the **<Alt><F1>** keys to display the firmware revision. The revision format is as follows:

BOARD-E.MOD.LG.VERS.IND

Name of the board
Version of the board
Platine Terminal model (M40, M35...)
Default set-up language
Version of the firmware
Index of the firmware version
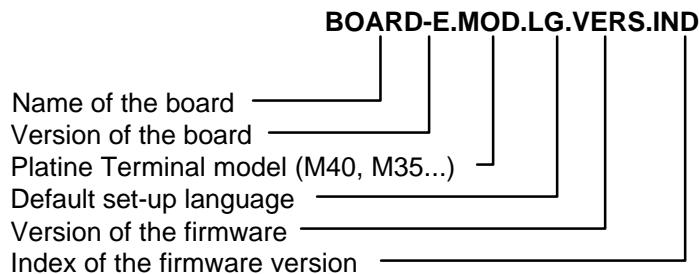
For example: TB105-1.M40.FR.9648.c

- 2 -
SPECIFIC FEATURES

This chapter describes three specific features of the AXEL Platine terminal.

2.1 - DIAL OUT MODEM SUPPORT

AX3000 serial models have a built-in telecom set-up program to monitor remote connections over telephone lines. Telecom Set-Up provides:
- automatic dialing,
- automatic matching of terminal parameters to the remote host,
- an embedded remote directory.

Each entry in the remote directory lists:
- the name (alphanumeric character string),
- the phone number,
- the operating system (SCO UNIX, AIX IBM, etc).

This combination (Name / Phone Number / Emulation) supports fast, automatic connection of the terminal to any remote host.

To put the Platine terminal in Telecom Set-Up mode, use the following key combination:

Note: use the **<∗>** key on the numeric keypad.

For additional information, refer to the *Platine Terminal AXEL - Telecom Feature* manual.

2.2 - LOCAL HARDCOPY

A hardcopy feature is available on the Platine terminal through the **<PrtScr>** key.

Hardcopy processing depends on which type of keyboard monitoring is in use:
- In ASCII mode, the hardcopy is processed locally by the Platine itself,
- In Scancode mode, the hardcopy is processed by the host computer.

In order to test the printer, it is possible to perform a <u>local hardcopy</u> even if the keyboard is monitored in Scancode mode. To perform such a hardcopy, use the following key combination:

2.3 - ANALYZE FEATURE

The analyze feature allows use of a local printer to record data received by the Platine terminal.

In analyze mode, data received by the Platine terminal is both normally processed (i.e. displayed on the screen) and printed (in hexadecimal format) on the local printer.

Enable (or disable) the analyze mode through the following key combination:

Note: use the **<+>** key on the numeric keypad.

- 3 -
TERMINAL COMMANDS

This chapter describes supported terminal commands for each personality.

The Platine terminal supports many personalities (emulations):
- Native personalities (Prologue operating system),
- ANSI personalities (UNIX systems),
- PCTERM personalities (OS/2, Théos, etc),
- VT220 emulation,
- SM9400 and SM9412 personalities (special firmware).

3.1 - NATIVE PERSONALITIES

Native personality is selected through three predefined set-ups:
- PROLOGUE 2/3
- PROLOGUE 4/5
- TWIN SERVER

Terminal Command Formats are as follows:

xxh

xx   Hexadecimal ASCII character
       (example: 1Bhex is 27 decimal).

Esc cmd par1 par2 ...

Esc   1Bhex character
cmd command code (ASCII characters greater than 20hex)
parx command parameters (underlined and italic parameter values
       are from 00h to FFhex, other values are greater than 20hex).

Controlling the Cursor

Cursor right	06h
Cursor left	08h
Cursor up	0Bh
Cursor down	05h
Cursor to line Pn1 (0..24) and column Pn2 (0..131)	Esc f *Pn1* *Pn2*
Enable cursor	Esc w
Disable cursor	Esc v
Set cursor style to line	Esc u 01h
Set cursor style to block	Esc u 02h
Set cursor style to half block	Esc u 03h

Editing

Move cursor to next tab stop	09h
Clear all tab stops	Esc A
Set tab stop at cursor position	Esc B
Clear tab stop at cursor position	Esc C
Restore all default tab stops	Esc D
Insert a null character at cursor position	Esc @
Insert a line of null characters at cursor line	Esc L
Delete cursor character	Esc P
Delete cursor line	Esc M
Clear screen (or message line)	0Ch
Clear screen from cursor	Esc J
Clear line from cursor	Esc K
Display *Pn1* times the ASCII character *Pn2*	Esc # *Pn1* *Pn2*

Controlling the Terminal

Sound a bell	07h
Lock keyboard	Esc ; 0
Unlock keyboard	Esc ; 1
Lock keyboard and send an ACK (06h)	Esc ; 2
Monitor mode off	Esc / 00h
Monitor mode on (symbols)	Esc / 01h
Monitor mode on (hexadecimal value)	Esc / 02h
Local mode	Esc k
Full duplex mode	Esc l
Set 80-column display	Esc = 0
Set 132-column display	Esc = 1

Enable main screen (24 lines)	Esc]
Enable message line (25Th. line)	Esc }
Set VGA bold mode (16 background colors)	Esc ` 0
Set VGA blink mode (8 background colors + blinking)	Esc ` 1
LEDs on	Esc 3 *Vleds*
LEDs off	Esc 4 not(*Vleds*)

      Byte *Vleds*: bit 2 is CAPS, bit 1 is NUM and bit 0 is SCROLL

Set key repetition delay	Esc 5 *Vrange*
Set key repetition speed	Esc 6 *Vrange*

      Vrange values (00h: low, 01h: medium, 02h: high)

Set keyboard dialect (ASCII mode only)	Esc % Vnation

      Vnation: 0: French   1: American   2: German   3: Italian
                      4: Spanish   5: Belgium   6: Swiss   7: Portuguese

Set a color of the VGA palette	Esc o 0 Vc *Vcvga*
Set overscan color	Esc o 1 *Vcvga*

      Vcvga values are in the range 00h to 3Fh

Enable coloring mode	Esc o 2
Disable coloring mode	Esc o 3
Set colors for coloring mode (5 pairs)	Esc o 4 Vc1 Vc2...Vc10
Graphic functions	Esc G *lg fct params*

Character attributes

Color terminal commands are not processed	Esc . 00h
Color terminal commands are processed	Esc . 01h

Character attributes:

All attributes off	Esc a
Reverse video	Esc b
Blinking	Esc c
Underline (monochrome VGA monitors only)	Esc d
Dim	Esc e
Bold	Esc h
Default (only Prologue 2/3)	Esc p
Set foreground color	Esc r Vc
Set background color	Esc f Vc
Set default foreground color	Esc n Vc

      Vc: 0: black   1: red   2: green   3: brown
               4: blue   5: magenta   6: cyan   7: white
               8: grey   9: light red   A: light green   B: yellow
               C: light blue   D: light magenta   E: light cyan   F: bright white

Controlling the Terminal (only Prologue 4 and 5)

Clear box (<u>x</u>, <u>y</u>, <u>l</u>, <u>h</u>) to character attribute <u>atb</u> & ASCII character <u>car</u>   Esc 0 <u>y</u> <u>x</u> <u>h</u> <u>l</u> <u>atb</u> <u>car</u>

Scroll <u>n</u> lines within the box (<u>x</u>, <u>y</u>, <u>l</u>, <u>h</u>)   Esc 1 <u>y</u> <u>x</u> <u>h</u> <u>l</u> <u>dir</u> <u>n</u> <u>atb</u>

       <u>dir</u> is the scroll direction (01h: up , 02h: down, 03h: right, 04h: left)

       <u>atb</u> character attribute used for new lines (only if <u>dir</u> is equal to <u>1</u> or <u>2</u>)

Clear box (<u>x</u>, <u>y</u>, <u>l</u>, <u>h</u>) to character attribute <u>atb</u>   Esc 2 <u>y</u> <u>x</u> <u>h</u> <u>l</u> <u>atb</u>

     <u>atb</u>: 00h: black   01h: red   02h: green   03h: brown

              04h: blue   05h: magenta   06h: cyan   07h: white

              08h: grey   09h: light red   0Ah: light green   0Bh: yellow

              0Ch: light blue   0Dh: light magenta 0Eh: light cyan   0Fh: bright white

Data compressed   Esc ? <u>rep</u> <u>car</u>

Define screen size   Esc 7 <u>y</u> <u>x</u> <u>h</u> <u>l</u>

Reset defined screen size   Esc 8

Controlling the Terminal (only Prologue 5)

Monitoring the mouse:

      Mouse report   Esc S @

      Enable mouse cursor   Esc S A

      Disable mouse cursor   Esc S B

      Mouse cursor to line <u>y</u> and column <u>x</u>   Esc S C <u>y</u>+20h <u>x</u>+20h

      Set mouse event reporting (only for movement)   Esc S G

      Reset mouse event reporting   Esc S H

      Request mouse hardware configuration   Esc S I[*]

 Monitoring the VGA palette:

      Select VGA mode   Esc V 1 Vga

      Set one DAC register   Esc V 3 0 1 h l RGB

      Set many DAC registers   Esc V 4 h1 l1 h2 l2 RGB

      Select one VGA palette   Esc V 5 Npal

      Set one VGA palette entry   Esc V 7 <u>Vpal</u> + 20h <u>Vcvga</u>

      Set the 16 VGA palette entries   Esc V 8 (<u>Vcvga</u>)x16

      Set the 256 DAC registers   Esc V 9 (RGB)x256

---

[*] The last character in this sequence is an uppercase i

Printing Control Sequences

Default port:

Default port is AUX1 port	Esc F 1
Default port is LPT port	Esc F 2

Using default port (serial or parallel):

Print screen	Esc O
Enable local printing mode	Esc (
Disable local printing mode	Esc [22]

Enable Po auxiliary port for sending only (disable: Esc [22])	Esc : Po
Enable receive mode of Po auxiliary port (AUX1)	Esc ! Po
Disable receive mode of Po auxiliary port (AUX1)	Esc " Po

Po = 0: default port

Po = 1: AUX1 port

Po = 2: parallel port

Programming Function Keys

Set all the function keys to their default values	Esc Y
Set function key (fct) to the character string 'message'	Esc Z fct message 7Fh

- fct: function key selector:

@	: <F1>	p	: <Home>
A	: <F2>	q	: <↑>
...	...	r	: <PgUp>
I	: <F10>	s	: <->
J	: <Shift><F1>	t	: <←>
...	...	u	: <5>
S	: <Shift><F10>	v	: <→>
T	: <Ctrl><F1>	w	: <+>
...	...	x	: <End>
]	: <Ctrl><F10>	y	: <↓>
^	: <Alt><F1>	z	: <PgDn>
...	...	{	: <Ins>
g	: <Alt><F10>	|	: <Sup>

- message: character string (any character except 7Fh)

3.2 - ANSI PERSONALITIES

An ANSI personality is selected through ten predefined set-ups:
- ANSI   - XENIX SCO
- ANSI DOS   - UNIX SVR4
- UNIX SCO 3.2.2   - ANSI INTERACTIVE
- UNIX SCO 3.2.4   - ANSI RS/6000
- SCO OPENSERVER   - ANSI MOS

Terminal Command Formats are as follows:

xxh

xx   Hexadecimal ASCII character (example: 1Bh is 27 decimal).

Esc x

Esc   1Bh character

x   ASCII character (greater than 20h)

CSI P... F

CSI   **Esc [** ASCII characters (1Bh and 5Bh)

P...   ANSI command parameters. Parameters are separated by a semicolon character (3Bh).

F   Final character

Notes: - a CSI sequence contains only 1 unprintable ASCII character (smaller than 20h). All other characters are printable (greater than 20h).
- For the 4 SCO emulations, CSI can also be set using the 9Bh ASCII character (instead of the Esc [ASCII characters).

Controlling the Cursor

Cursor right Pn columns	CSI Pn C (or CSI Pn a)
Cursor right	08h
Cursor left Pn columns	CSI Pn D
Cursor up	Esc M
Cursor up Pn lines	CSI Pn A
Cursor up Pn lines and to column 1	CSI Pn F
Cursor down	Esc D (or 0Ah)
Cursor down Pn lines	CSI Pn B (or CSI Pn e)
Cursor down Pn lines and to column 1	CSI Pn E
Cursor to column Pn	CSI Pn G (or CSI Pn `)
Cursor to line Pn	CSI Pn d

Cursor to line Pn1 (1..25) column Pn2 (1..132)	CSI Pn1;Pn2 H
	(or CSI Pn1;Pn2 f)
Cursor to start of next line	0Dh
Save cursor position	CSI s (or Esc 7)
Restore cursor to saved position	CSI u (or Esc 8)
Disable cursor	CSI < 0 @
Enable cursor	CSI < 1 @

Controlling the Terminal

Sound bell	07h
Set scrolling region (beginning line number, ending line number)	CSI Pn1;Pn2 r
Terminal mode on	CSI Ps;...Ps h
Ps = 2: lock keyboard	
Ps = 4: insert character mode	
Ps = 20: new line (LF=CR+LF)	
Ps = 32: lock keyboard and send ACK (06h)	
Ps = 33: autoscrolling mode on	
Ps = ?3: set 132-column display	
Ps = ?6: origin is scrolling region	
Ps = ?7: autowrap mode on	
Terminal mode off	CSI Ps;...Ps l[*]
Ps = 2: unlock keyboard	
Ps = 4: replace character mode	
Ps = 20: line feed	
Ps = 33: autoscrolling mode off	
Ps = ?3: set 80-column display	
Ps = ?6: origin is screen	
Ps = ?7: autowrap mode off	
PC-scancode mode	CSI < 0 A
ASCII mode	CSI < 1 A
Display 24 data lines + 1 message line	CSI < 0 I[**]
Display 25 data lines	CSI < 1 I
Enable main screen (24 lines)	CSI < 0 E
Enable message line (25[Th.] line)	CSI < 1 E
Disable coloring feature	CSI < 0 G
Enable coloring feature	CSI < 1 G

---

[*] The last character in this sequence is a lowercase L

[**] The last character in this sequence and in the next sequence is an uppercase i

---

Set colors for coloring mode (4 pairs)	CSI < 2;Cn1;...;Cn8 G
Set a VGA palette color	CSI < 3;Cn;Pn G
Enable private enhanced AXEL ANSI sequence mode	CSI < 0 B
Disable private enhanced AXEL ANSI sequence mode	CSI < 1 B
Save current setting and set UNIX SCO 3.2.2 personality	CSI < 0 H
Restore saved setting	CSI < 1 H
Enable view number Pn	CSI Pn z
Enable monitor mode	Esc U
Disable monitor mode	Esc X
Operating modes	CSI = Pn L

    Pn = 0: cleared area (CSI Pn J, CSI Pn K or scroll) are filled by the current attribute

    Pn = 1: cleared area (CSI Pn J, CSI Pn K or scroll) are filled by the normal attribut

    Pn = 2: CSI Pn g is like CSI = Pn g (see Editing section)

    Pn = 3: CSI Pn g is used for tabulations (see Editing section)

Change page (only if '4 views, 2 pages' is selected through the set-up)   CSI < Ps1;Ps2 L

    Ps1 = 0: regular page changing   Ps2 = 0: enable next page

    Ps1 = 1: copy current page to wanted page before swap   Ps2 = 1: enable page number 1

    Ps1 = 2: clear wanted page before swap   Ps2 = 2: enable page number 2

Turn keyboard LEDs on or off   CSI < Pn1;Pn2;Pn3 O

    Pn1 is the state of NUM LED, Pn2 is the state of CAPS LED and Pn3 is the state of SCROLL LED.

    The Pn parameter values should be:

      Pn = 0: the state of the LED is not modified Pn = 1: turn the LED on Pn = 1: turn the LED on

Mouse feature (if set through the set-up)   CSI < 1 M[*]

      Pn = 0: disable mouse   Pn = 1: local mode   Pn = 2: raw mode

Graphic feature (if set through the set-up)   CSI < Ps;... Ps K[**]

Down Loading character feature (if set through the set-up)   CSI < Ps;... Ps N <font>

Double-size characters (if set through the set-up)   CSI < Pn P term mess term

     Pn = 1: double height   Pn = 2: double width   Pn = 3: double height / double width

     term: message terminator   message: character string displayed in double size

Controlling Character Attributes

Definition   CSI Ps;...Ps m

    Ps = 0: all attributes off

    Ps = 1: bold

    Ps = 4: underline (only monochrome VGA monitor)

    Ps = 5: blinking

---

[*] For more information, refer the concerned literature

[**] For more information, refer the concerned literature

Ps = 7: reverse video

Ps = 8: blank

Ps = 10: selects the primary font

Ps = 11: selects the first alternate font; lets ASCII characters less than 32 be displayed as ROM characters

Ps = 12: selects a second alternate font; toggles high bit of extended ASCII code before displaying as ROM characters

Ps = 22: bold off

Ps = 24: blinking off

Ps = 25: underline off

Ps = 27: reverse video off

Ps = 3x: set foreground color to color x (x from 0 to 7)

0: black	1: red	2: green	3: brown[*]
4: blue	5: magenta	6: cyan	7: white

Ps = 38: enable underline option

Ps = 39: disable underline option

Ps = 4x: set background color to color x (x from 0 to 7)

0: black	1: red	2: green	3: brown
4: blue	5: magenta	6: cyan	7: white

Editing

Set tab stop at cursor position	Esc H
Move cursor to next tab stop	09h
Move cursor backward Pn tab stops	CSI Pn Z
Clear tab stop at cursor position	CSI 0g
Clear all tab stops	CSI 3g
Display ASCII character Pn	CSI = Pn g
Insert Pn null characters beginning at cursor position	CSI Pn @
Insert Pn lines of null characters beginning at cursor line	CSI Pn L
Delete Pn characters beginning at cursor position	CSI Pn P
Delete Pn lines beginning at cursor line	CSI Pn M
Erase display:	
from cursor to end of screen	CSI 0 J
from beginning of screen to cursor	CSI 1 J
entire screen	CSI 2 J
Erase line:	
from cursor to end of line	CSI 0 K

---

[*] Yellow for ANSI RS6000 personality

from start of line to cursor	CSI 1 K
entire line	CSI 2 K
Erase Pn character beginning at cursor column	CSI Pn X
Display Pn times, the last displayed character	CSI Pn b

Printing Control Sequences

Select the default printer port: CSI < Po F
        Po = 1: AUX1   Po = 2: parallel
Using default port (serial or parallel):   CSI Pn i
    Pn = 0: print screen   Pn = 5: Enable local printing mode   Pn = 4: Disable local printing mode
Enable Po auxiliary port for sending only (disable: CSI 4i)   CSI < 5; Po C
Enable receive mode of Po auxiliary port (only AUX1)   CSI < 5; Po D
Disable receive mode of Po auxiliary port (only AUX1)   CSI < 4; Po D
        Po = 0: default port   Po = 1: AUX1   Po = 2: parallel

User Defined Keys

ANSI mode:

Syntax is: Esc Q Code Terminator Message Terminator
            - Code: function key (<F1> = 0 (30h) ... <F61> = l (6Ch))
            - Terminator: one character (>20h)
            - Message: key definition (any character except Terminator). Character '^' (5Eh) indicates
              20h must be subtracted from the next character.
Example: **ESC Q 0 amenu^-a**, <F1> sends **menu <RC>**

AXEL mode:

Syntax is: CSI < Code P Terminator Message Terminator
            - Code: function key (refer to appendix A.3 or see the AX3000 set-up)
            - Terminator: one character (>20h)
            - Message: key definition (any character except Terminator). Character '^' (5Eh) indicates
              20h must be subtracted from the next character.
Example: **CSI < 1 P amenu^-a**, <F1> sends **menu <RC>**

Additional Screen Attribute Sequences (except ANSI DOS)

Set overscan color to color Cn (64 colors are available)	CSI = Cn A
VGA mode 'blink' (8 background colors)	CSI = D
VGA mode 'bold' (16 background colors)	CSI = E
Set normal foreground color to Cn	CSI = Cn F[*]
Set normal background color to Cn	CSI = Cn G

---

[*] In this sequence and in the next 7 sequences, Cn value is in range 0 to 15

Set normal foreground color to Cn1 and background color to Cn2	CSI 2;Cn1;Cn2 m
Set reverse foreground color to Cn	CSI = Cn H
Set reverse background color to Cn	CSI = Cn I
Set reverse foreground color to Cn1 and background color to Cn2	CSI 7;Cn1;Cn2 m
Set graphic foreground color to Cn	CSI = Cn J
Set graphic background color to Cn	CSI = Cn K
For XENIX personality only: VGA mode 'bold' (16 background colors)	CSI 3;0 m
For XENIX personality only: VGA mode 'blink' (8 background colors)	CSI 3;1 m
Save current color setting	CSI = Y
Restore saved color setting	CSI = Z

Private Enhanced AXEL ANSI Sequence Mode
The following sequences, derived from native personalities, may be used to speed up the display on a Platine terminal. These sequences are shorter than their equivalent ANSI sequences.

Description	Sequence	Equivalent ANSI Seq.
Cursor up	05h	CSI B
Cursor right	06h	CSI C
Cursor left	08h	CSI D
Cursor down	0Bh	CSI A
Clear screen	0Eh	CSI H CSI 2J
Cursor to line 1 column 1	1Eh	CSI H
Insert a null character	Esc @	CSI @
Erase display from cursor to end of screen	Esc J	CSI J
Erase line from cursor to end of line	Esc K	CSI K
Insert a line of null characters	Esc L	CSI L
Delete current line	Esc M	CSI M
Delete 1 character	Esc P	CSI P
Start local printing mode	Esc '	CSI 5i
Stop local printing mode	Esc [22]	CSI 4i
All attributes off	Esc a	CSI 0m
Reverse video	Esc b	CSI 7m
Blinking	Esc c	CSI 5m
Underline	Esc d	CSI 4m
Cursor to line L and column C	Esc f L C	CSI L+33;C+33 H
Bold	Esc h	CSI 1m
Default attribute	Esc p	CSI 7m
Enable cursor	Esc v	CSI <1@
Disable cursor	Esc w	CSI <0@
Black foreground	Esc r 0	CSI 22;30m
Red foreground	Esc r 1	CSI 22;31m
Green foreground	Esc r 2	CSI 22;32m
Brown foreground	Esc r 3	CSI 22;33m
Blue foreground	Esc r 4	CSI 22;34m
Magenta foreground	Esc r 5	CSI 22;35m
Cyan foreground	Esc r 6	CSI 22;36m
White foreground	Esc r 7	CSI 22;37m
Grey foreground	Esc r 8	CSI 1;30m
Light red foreground	Esc r 9	CSI 1;31m

Description	Sequence	Equivalent ANSI Seq.
Light green foreground	Esc r A	CSI 1;32m
Yellow foreground	Esc r B	CSI 1;33m
Light blue foreground	Esc r C	CSI 1;34m
Light magenta foreground	Esc r D	CSI 1;35m
Light cyan foreground	Esc r E	CSI 1;36m
Bright white foreground	Esc r F	CSI 1;37m
Black background	Esc s 0	CSI 40m
Red background	Esc s 1	CSI 41m
Green background	Esc s 2	CSI 42m
Brown background	Esc s 3	CSI 43m
Blue background	Esc s 4	CSI 44m
Magenta background	Esc s 5	CSI 45m
Cyan background	Esc s 6	CSI 46m
White background	Esc s 7	CSI 47m
Cursor to line L and column C	Esc ü L C	CSI L+33;C+33
Reverse video	Esc é	CSI 7m
Reverse video off	Esc â	CSI 27m
Blinking	Esc ä	CSI 5m
Bold off	Esc à	CSI 22m
Blinking off	Esc å	CSI 25m
Bold	Esc ç	CSI 1m
Set foreground color to x and background color to y	Esc ê x y	CSI 3x;4ym

      x and y available values:

0: black	1: red	2: green	3: brown
4: blue	5: magenta	6: cyan	7: white

Description	Sequence	Equivalent ANSI Seq.
Delete current line	Esc ë	CSI M
Insert a line of null characters	Esc è	CSI L
Enable message line (25$^{Th.}$ line)	Esc ï	CSI <1E
Enable main screen (24 lines)	Esc î	CSI <0E
Delete a character	Esc ì	CSI P
Insert a null character	Esc Ä	CSI @
Erase line from cursor to end of line	Esc Å	CSI K
Erase display from cursor to end of screen	Esc É	CSI J

3.3 - PCTERM PERSONALITIES

A PCTERM personality is selected through one of three predefined set-ups:
- PCTERM
- PCTERM THEOS
- OS2 POLYMOD2

Terminal Commands Formats are the following:
xxh
   xx   Hexadecimal ASCII character (example: 1Bh is 27 decimal).
Esc cmd par1 par2 ...
   Esc   1Bh character
   cmd   command code (ASCII characters are greater than 20h)
   parx   command parameters (underlined and italic parameter values are from 00h to FFh, other values are greater than 20h).

Controlling Cursor

Cursor left	08h
Cursor right	0Ch
Cursor up (no scroll)	0Bh
Cursor up ; scroll	Esc j
Cursor down (no scroll)	16h
Cursor down ; scroll	0Ah
Cursor to line 1 and column 1	1Eh
Cursor to start of line	0Dh
Cursor to start of next line	1Fh
Cursor to line Pn1 (0..24) and column Pn2 (0..79)	Esc = _Pn1_+20h _Pn2_+20h

Editing

Move cursor to next tab stop	09h
Move cursor to previous tab stop	Esc I[*]
Set tab stop at cursor position	Esc 1
Clear tab stop at cursor position	Esc 2
Clear all tab stops	Esc 3
Insert a space character at cursor position	Esc Q
Insert a line of space characters at cursor line	Esc E
Delete cursor character	Esc W

---

[*] The last character in this sequence is an uppercase i

Delete cursor line	Esc R
Clear screen to nulls	Esc *
Clear screen to spaces	Esc +
Clear screen to write-protected spaces	Esc ,
Clear screen to character _car_	Esc F _car_

Controlling the Terminal

Sound a bell	07h
Lock keyboard	Esc #
Unlock keyboard	Esc "
Set cursor style	Esc . Pn1

Pn1 = 0 (invisible)	Pn1 = 1 (visible)	Pn1 = 2 (block)
Pn1 = 3 (underline)	Pn1 = 4 (underline)	Pn1= 5 (block)

Autowrap mode on	Esc ~
Autowrap mode off	Esc 0
Insert mode on (replace mode off)	Esc Z
Replace mode on (insert mode off)	Esc r
Monitor mode on	Esc U
Monitor mode off	Esc u (or Esc X)
Restore normal screen	Esc d
Reverse screen	Esc b
Turn screen display off	Esc O (or Esc 20h 8)
Turn screen display on	Esc N (or Esc 20h 9)
ASCII mode	Esc c (or Esc 20h q or Esc 20h r)
PC-Scancode mode	Esc H (or Esc 20h p)
Set hardware handshake (DTR)	0Eh
Set software handshake (XON/XOFF or XPC)	0Fh
Set 80-column display	Esc m
Set 132-column display	Esc n
Display 25 data lines (clear screen)	Esc ^
Display 25 data lines (no clear screen)	Esc e (or Esc h)
Display 24 data lines + 1 status line (no clear screen)	Esc g
Display computer message in status line	Esc f str 0Dh
'new line' mode on (CR=CR+LF)	Esc 8
'new line' mode off	Esc 9
Full duplex mode on	Esc }
Autoscrolling mode on	Esc 20h v (or Esc 20h @)
Autoscrolling mode off	Esc w

Set-up MAIN port   Esc 20h t p1 p2 p3
        p1 = 0 (8-bit control)   p2 = 0 (no parity)   p3 = 0 (1 stop bit)
        p1 = 1 (7-bit control)   p2 = 1 (even parity)   p3 = 1 (2 stop bit)
                              p2 = 2 (odd parity)

NUM LED on   Esc 20h J
NUM LED off   Esc 20h K
MAJ LED on   Esc 20h L
MAJ LED off   Esc 20h M
DEFIL LED on   Esc 20h N
DEFIL LED off   Esc 20h O

Controlling Character Attributes (except OS/2 POLYMOD2)

Definition   Esc G attr

attr values			
0 : Normal	p or @	: Normal + Dim	
1 : Invisible	q or A	: Invisible + Dim	
2 : Blink	r or B	: Blink + Dim	
3 : Invisible	s or C	: Invisible + Dim	
4 : Reverse	t or D	: Reverse + Dim	
5 : Invisible + Reverse	u or E	: Invisible + Reverse + Dim	
6 : Reverse + Blink	v or F	: Reverse + Blink + Dim	
7 : Invisible + Reverse	w or G	: Invisible + Reverse + Dim	
8 : Underline	x or H	: Underline + Dim	
9 : Invisible	y or I	: Invisible + Dim	
: : Underline + Blink	z or J	: Underline + Blink + Dim	
; : Invisible	{ or K	: Invisible + Dim	
< : Underline	| or L	: Underline + Dim	
= : Invisible + Reverse	} or M	: Invisible + Reverse + Dim	
> : Underline + Blink	~ or N	: Underline + Blink + Dim	
? : Invisible + Reverse	7Fh or o	: Invisible + Reverse + Dim	

Color Character Attributes (only for THEOS)

Definition   Esc / c1 c2 c3 c4

        c1: foreground normal color   c3: foreground reverse color
        c2: background normal color   c4: background reverse color
c1, c2, c3 et c4 values:

	0: black	1: blue	2: green	3: cyan
	4: red	5: magenta	6: yellow	7: white

Character Attributes (only for OS/2 POLYMOD2)

Definition   Esc G _attr_

　　The format of _attr_ is the format of the standard VGA character attribute

Write-Protected Characters (only THEOS)

A write-protected character is written with the dim attribute (cf. character attributes)

Protect mode on   Esc &

Protect mode off   Esc '

Characters are written only in the protected regions   Esc (

Characters are written everywhere   Esc)

Clear unprotected:

　　　screen to spaces   Esc ; or 1Ah

　　　screen to nulls   Esc :

　　　line to spaces from cursor   Esc T

　　　line to nulls from cursor   Esc t

　　　screen to spaces from cursor   Esc Y

　　　screen to nulls from cursor   Esc y

Printing Control Sequences

Print screen   Esc P

Transparent print mode on   Esc `

Transparent print mode off   Esc a

Non-transparent print mode on   Esc @ (12h)

Non-transparent print mode off   Esc A (14h)

Print next character   10h

Programming Function Keys

Syntax is: Esc z Keyn _message_ 7Fh

　　　Keyn　　　: key selector

　　　　　@ : <F1>　　　　` : <Shift><F1>

　　　　　A : <F2>　　　　a : <Shift><F2>

　　　　　...　 ...　　　　　　...　...

　　　　　K : <F12>　　　　k : <Shift><F12>

　　message : definition string (length max. 32, any character except 7Fh).

3.4 - VT220 PERSONALITY

The VT220 personality is selected through the VT220 predefined set-up.

Terminal Commands Formats are as follows:
   xxh
     xx   Hexadecimal ASCII character (example: 1Bh is 27 decimal).
   Esc x
     Esc   1Bh character
     x   ASCII character (greater than 20h)
   CSI P... F
     CSI   **Esc [** ASCII characters (1Bh and 5Bh)
     P...   ANSI command parameters. Parameters are separated by a
             semicolon character (3Bh).
     F   Final character

Note: a CSI sequence contains only one unprintable ASCII character (smaller than 20h). All other characters are printable (greater than 20h).

Controlling the Cursor

Cursor right Pn columns	CSI Pn C
Cursor left	08h
Cursor left Pn columns	CSI Pn D
Cursor up	Esc M
Cursor up Pn lines	CSI Pn A
Cursor down	Esc D (or 0Ah)
Cursor down Pn lines	CSI Pn B
Cursor down Pn lines and to column 1	Esc E
Carriage return (and line feed according to the AX3000 set-up)	0Dh
Cursor to line Pn1 (1..25) column Pn2 (1..132)	CSI Pn1;Pn2 H
	(or CSI Pn1;Pn2 f)

Editing

Set tab stop at cursor position	Esc H
Move cursor to next tab stop	09h
Clear tab stop at cursor position	CSI 0g
Clear all tab stops	CSI 3g
Insert Pn null characters beginning at cursor position	CSI Pn @
Insert Pn lines of null characters beginning at cursor line	CSI Pn L

Delete Pn characters beginning at cursor position	CSI Pn P
Delete Pn lines beginning at cursor line	CSI Pn M
Erase display:	
from cursor to end of screen	CSI 0 J
from beginning of screen to cursor	CSI 1 J
entire screen	CSI 2 J
Erase line:	
from cursor to end of line	CSI 0 K
from start of line to cursor	CSI 1 K
entire line	CSI 2 K
Erase Pn characters beginning at cursor column	CSI Pn X

Character Sets

Assign Ps character set as G0	Esc (Ps
Assign Ps character set as G1	Esc) Ps
Assign Ps character set as G2	Esc ∗ Ps
Assign Ps character set as G3	Esc + Ps

Ps = B (ASCII)	Ps = R (French)	Ps = < (DEC multinational)
Ps = K (German)	Ps = Y (Italian)	Ps = 0 (DEC special graphic)
Ps = Z (Spanish)	Ps = = (Swiss)	Ps = %6 (Portuguese)

Map G0 to GL	0Fh
Map G1 to GL	0Eh
Map G2 to GL	Esc n
Map G3 to GL	Esc o
Map G1 to GR	Esc ~
Map G2 to GR	Esc }
Map G3 to GR	Esc |
Temporarily map the G2 character set to GL, for the next character	Esc N
Temporarily map the G3 character set to GL, for the next character	Esc O

Controlling Character Attributes

Definition	CSI Ps;...Ps m

Ps = 0: normal
Ps = 1: dim
Ps = 4: underline (only monochrome VGA monitors)
Ps = 5: blinking
Ps = 7: reverse video
Ps = 8: blank
Ps = 22: normal

Ps = 24: blinking off

Ps = 25: underline off

Ps = 27: reverse video off

Ps = 3x: set foreground color to color x (x from 0 to 7)

0: black	1: red	2: green	3: brown
4: blue	5: magenta	6: cyan	7: white

Ps = 4x: set background color to color x (x from 0 to 7)

0: black	1: red	2: green	3: brown
4: blue	5: magenta	6: cyan	7: white

Controlling the Terminal

Sound bell   07h

Define scrolling region (beginning line number, ending line number)   CSI Pn1;Pn2 r

Terminal mode on   CSI Ps;...Ps h

Ps = 2: lock keyboard

Ps = 4: insert character mode

Ps = 20: new line mode (LF=CR+LF)

Ps = 54: ASCII mode

Ps = ?1: cursor keys mode: application

Ps = ?3: set 132-column display

Ps = ?4: smooth scroll

Ps = ?5: Light background (paper white)

Ps = ?6: origin is scrolling region

Ps = ?7: autowrap mode on

Ps = ?8: autorepeat mode on

Ps = ?12: turn the CAPS LED on

Ps = ?18: print Form Feed (0Ch) mode on

Ps = ?19: printer extent mode: screen

Ps = ?25: enable cursor

Ps = ?42: national mode

Terminal mode off   CSI Ps;...Ps l[*]

Ps = 2: unlock keyboard

Ps = 4: replace character mode

Ps = 20: line feed mode

Ps = 54: PC-scancode mode

Ps = ?1: cursor keys mode: cursor

Ps = ?2: entering VT52 Mode

---

[*] The last character in this sequence is a lowercase L

Ps = ?3: set 80-columns display

Ps = ?4: jump scroll

Ps = ?5: normal background

Ps = ?6: origin is screen

Ps = ?7: autowrap mode off

Ps = ?8: autorepeat mode off

Ps = ?12: turn the CAPS LED off

Ps = ?18: print Form Feed (0Ch) mode off

Ps = ?19: printer extent mode: region

Ps = ?25: disable cursor

Ps = ?42: multinational mode

Display 24 data lines + 1 message line	CSI < 0 I [*]
Display 25 data lines	CSI < 1 I
Enable main screen (24 lines)	CSI < 0 E
Enable message line (25[Th.] line)	CSI < 1 E
Keypad application mode	Esc =
Keypad numeric mode	Esc >
Double-width, double-height line (top half)	Esc # 3
Double-width, double-height line (bottom half)	Esc # 4
Single-width, single-height line	Esc # 5
Double-width, single-height line	Esc # 6
Enable view number Pn	CSI Pn z
Enable view number 1	CSI U
Enable view number 2	CSI V
Save current cursor position	Esc 7
Restore saved cursor position	Esc 8
Disable coloring feature	CSI < 0 G
Enable coloring feature	CSI < 1 G
Set colors for coloring mode (4 pairs)	CSI < 2;Cn1;...;Cn8 G
Set a VGA palette color	CSI < 3;Cn;Pn G
Change page (only if '4 views, 2 pages' is selected through the set-up)	CSI < Ps1;Ps2 L

Ps1 = 0: regular page changing   Ps2 = 0: enable next page

Ps1 = 1: copy current page to wanted page before swap   Ps2 = 1: enable page number 1

Ps1 = 2: clear wanted page before swap   Ps2 = 2: enable page number 2

Turn keyboard LEDs on or off   CSI < Pn1;Pn2;Pn3 O

Pn1 is the state of NUM LED, Pn2 is the state of CAPS LED and Pn3 is the state of SCROLL LED.

---

[*] The last character in this sequence and in the next sequence is an uppercase i

---

The Pn parameter values should be:

Pn = 0: the state of the LED is not modified Pn = 1: turn the LED on Pn = 1: turn the LED on

Mouse feature (if set through the set-up)   CSI < 1 M[*]

Pn = 0: disable mouse   Pn = 1: local mode   Pn = 2: raw mode

Graphic feature (if set through the set-up)   CSI < Ps;... Ps K[**]

Printing Control Sequences

Select the default printer port: CSI < Po F

Po = 1: AUX1   Po = 2: parallel

Using default port (serial or parallel):   CSI Pn i

Pn = 0: print screen   Pn = 5: Enable local printing mode   Pn = 4: Disable local printing mode

Enable Po auxiliary port for sending only (disable: CSI 4i)   CSI < 5; Po C

Enable receive mode of Po auxiliary port (only AUX1)   CSI < 5; Po D

Disable receive mode of Po auxiliary port (only AUX1)   CSI < 4; Po D

Po = 0: default port   Po = 1: AUX1   Po = 2: parallel

Print cursor line   CSI ? 1 i

Auto print mode on   CSI ? 5 i

Auto print mode off   CSI ? 4 i

Protected Characters

Next written characters are protected   CSI 1 " q

Next written characters are unprotected   CSI 2 " q (or CSI 0 " q)

Erase only unprotected characters in display:

     from cursor to end of screen   CSI ? 0 J

     from beginning of screen to cursor   CSI ? 1 J

     entire screen   CSI ? 2 J

Erase only unprotected characters in line:

     from cursor to end of line   CSI ? 0 K

     from start of line to cursor   CSI ? 1 K

     entire line   CSI ? 2 K

User Defined Keys

VT220 mode:

Syntax is: Esc P Ps1 ; Ps2 | Keyn / Stn { ; Keyn / Stn } Esc \

     Ps1=0: clear all keys before loading new values (default value)

     Ps1=1: clear one key at a time, before loading a new value

---

[*] For more information, refer the concerned literature

[**] For more information, refer the concerned literature

Ps2=0: lock the keys (default value)

Ps2=1: do not lock the keys

Keyn: the key selector number indicates which key you are defining

17: <Shift><F6>	23: <Shift><F11>	29: <Alt><Shift><F8>
18: <Shift><F7>	24: <Shift><F12>	31: <Alt><Shift><F9>
19: <Shift><F8>	25: <Alt><Shift><F5>	32: <Alt><Shift><F10>
20: <Shift><F9>	26: <Alt><Shift><F6>	33: <Alt><Shift><F11>
21: <Shift><F10>	28: <Alt><Shift><F7>	34: <Alt><Shift><F12>

Stn: the string parameter is the key definition, encoded as pairs of hexadecimal codes.

Example: LOG <RC> is coded by 4C4F470D

AXEL mode:

Syntax is: CSI < Code P Terminator Message Terminator

- Code: function key (refer to appendix A.3 or see the AX3000 set-up)

- Terminator: one character (>20h)

- Message: key definition (any character except Terminator). Character '^' (5Eh) indicates
  20h must be subtracted from the next character.

Example: **CSI < 1 P amenu^-a**, <F1> sends **menu <RC>**

Testing the Terminal

Hard terminal reset	Esc c
Soft terminal reset	CSI 0 ! p
Select an operating level	CSI Ps1;Ps2 " p

Ps1 = 61: level 1 (VT100)	Ps2 = 0: 8-bit controls (level 2 only)
Ps1 = 62: level 2 (VT220)	Ps2 = 1: 7-bit controls
	Ps2 = 2: 8-bit controls (level 2 only)

Reports

Primary Device Attributes request	CSI c (or Esc Z)
Response: CSI ? 62 ; 1 ; 2 ; 6 ; 7 ; 8 ; 9 c	
Secondary Device Attributes request	CSI > c
Response: CSI > 1 ; 10 ; 0 c	
AX3000 operating status	CSI 5 n
Response: CSI 0 n (ready)	
Cursor position report	CSI 6 n
Response: CSI Pn1; Pn2 R (Pn1 = line number, Pn2 = column number)	
Printer status	CSI ? 15 n
Response: CSI ? 10 n (printer ready)	
CSI ? 11 n (printer not ready)	
UDK (Programming function keys) report	CSI ? 25 n

    Response: CSI ? 20 n   (UDKs unlocked)

                  CSI ? 21 n   (UDKs locked)

Keyboard language   CSI ? 26 n

    Response: CSI ? 27;Pn1 n

            Pn1 values: 1   : North American   7   : German   9   : Italian

                                10 : Swiss   14 : French   15 : Spanish

                                16 : Portuguese

3.2 - SM94XX PERSONALITIES

A SM94xx personality is selected through two predefined set-ups:
- SM9400
- SM9412

Terminal Command Formats are as follows:

xxh
　xx　　　Hexadecimal ASCII character (example: 1Bh is 27 decimal).

Esc x
　Esc　　1Bh character
　x　　　ASCII character (greater than 20h)

CSI P... F
　CSI　　**Esc [** ASCII characters (1Bh and 5Bh)
　P...　ANSI command parameters. Parameters are separated by a semicolon character (3Bh).
　F　　　Final character

Notes: a CSI sequence contains only 1 unprintable ASCII character (smaller than 20h). All other characters are printable (greater than 20h).

Controlling the Cursor

Cursor right	18h
Cursor left	19h
Cursor up	1Ah
Cursor right Pn columns	CSI Pn C
Cursor left Pn columns	CSI Pn D
Cursor up Pn lines	CSI Pn A
Cursor down Pn lines	CSI Pn B
Cursor to line Pn1 (1..24) column Pn2 (1..132)	CSI Pn1;Pn2 H
Cursor to line Pn1 (0..23) column Pn2 (0..131)	Esc G Pn1+20h Pn2+20h
Cursor to line Pn1 (0..23) column Pn2 (0..131)	Esc G Pn1+20h Pn2+20h
Cursor to line 1 column 1 (upper left corner)	1Dh
Cursor to start of next line	1Eh
Cursor down (scroll if necessary)	0Ah
Cursor down (no scroll)	0Bh
Cursor to start of line	0Dh
Cursor block (Ps=2) or cursor line (Ps=4)	Esc n Ps

Editing

Delete characters before cursor position	Esc T
Delete Pn characters beginning at cursor position	CSI Pn P
Delete Pn lines beginning at cursor line	CSI Pn M
Erase Pn character beginning at cursor column	CSI Pn X
Insert Pn null characters beginning at cursor position	CSI Pn @
Insert Pn lines of null characters beginning at cursor line	CSI Pn L
Erase current line	0Fh
Clear screen from cursor to end of screen (if backspace=SM9400)	08h
Clear screen	0Ch
Scroll down Pn lines	CSI Pn T
Scroll up Pn lines	CSI Pn S
Scroll left Pn columns	CSI Pn 20h @
Scroll right Pn columns	CSI Pn 20h A

Controlling the Terminal

Sound bell	07h
Terminal mode on	CSI = Ps;...Ps h

      Ps = 0: autowrap mode off
      Ps = 1: enable vertical scrolling
      Ps = 4: disable cursor
      Ps = 5: character attribute mode
      Ps = 6: set 132-column display

Terminal mode on	CSI Ps;...Ps h

      Ps = 3: monitor mode on
      Ps = 4: insert character mode

Terminal mode off	CSI = Ps;...Ps l [*]

      Ps = 0: autowrap mode on
      Ps = 1: disable vertical scrolling
      Ps = 4: enable cursor
      Ps = 5: line attribute mode
      Ps = 6: set 80-column display

Terminal mode off	CSI Ps;...Ps l

      Ps = 3: monitor mode off
      Ps = 4: overwrite character mode

switch off display	Esc E
Switch on display	Esc F

---

[*] The last character in this sequence and in the next sequence is a lowercase L

Lock keyboard	Esc A
Unlock keyboard	Esc B
Control codes can be entered on keyboard	Esc O
Control codes can not be entered on keyboard	Esc N
Save AX3000 set-up	Esc ! 2
Restore AX3000 set-up	Esc ! 3

Controlling Screen Areas

A screen area is defined by its upper left corner (Pl1,Pc1) and its lower right corner (Pl2,Pc2).

Coordinates are in range 0 to 23 (lines) and 0 131 (columns)

Save a screen area	CSI Pl1;Pc1;Pl2;Pc2 u
Restore a screen area	CSI Pl1;Pc1 |[*]

Save a screen area and restore a previously saved screen area (i.e. swap two areas). P3=0: cursor position not modified / P3=1: cursor position restored   CSI Pl1;Pc1;Pl2;Pc2 }

Controlling Character Attributes

Definition (if CSI=5h)   CSI Ps;...Ps m

     Ps = 0: all attributes off

     Ps = 2: dim

     Ps = 4: underline (only monochrome VGA monitor)

     Ps = 5: blinking

     Ps = 7: reverse video

     Ps = 8: blank

Controlling Liner Attributes

Definition (if CSI=5l)   Esc v Ps

     Ps = @: Normal

     Ps = A: Underline

     Ps = B: Blink

     Ps = C: Underline + Blink

     Ps = D: Reverse

     Ps = E: Reverse + Underline

     Ps = F: Reverse + Blink

     Ps = G: Reverse + Blink + Underline

     Ps = H: Dim

     Ps = I: Dim + Underline

     Ps = J: Dim + Blink

---

[*] The ASCII code of the last character is 7Ch

Ps = K: Dim + Blink + Underline

Ps = L: Dim + Reverse

Ps = M: Dim + Reverse + Underline

Ps = N: Dim + Reverse + Blink

Ps = O: Dim + Reverse + Blink + Underline

Ps = P: Invisible

User Defined Keys

IN2 mode:

Define a function key:

    Esc K 0 Code Terminator Message Terminator

        - Code: function key

                <F1>=@, <F2>=A, <F3>=B...<F12>=K

                <Shift><F1>=', <Shift><F2>=a, <Shift><F3>=b...<Shift><F12>=c

        - Terminator: one character (>20h)

        - Message: key definition (any character except Terminator).

    Example: **ESC K 0 @ amenua**, <F1> sends **menu**

Restore default values:

    Esc K 8 Code 0Dh

          - Code: function key (see above). If Code is not present all the function keys are reset.

AXEL mode:

Syntax is: CSI < Code P Terminator Message Terminator

          - Code: function key (refer to appendix A.3 or see the AX3000 set-up)

          - Terminator: one character (>20h)

          - Message: key definition (any character except Terminator). Character '^' (5Eh) indicates

           20h must be subtracted from the next character.

Example: **CSI < 1 P amenu^-a**, <F1> sends **menu <RC>**

Printing Control Sequences

Enable local printing mode   10h

Disable local printing mode   1Ch

Box and line drawings

Esc m Ps Pc1 Pl1 Pc2 Pl2

        - Ps : function code

            Ps=D: draw a vertical line

            Ps=@: draw a horizontal line

            Ps=H: draw a box

            Ps=$: erase a vertical line

　　　　　　Ps=!: erase a horizontal line
　　　　　　Ps=<: erase a box
　　　　- Pc1 Pl1 Pc2 Pl2: coordinate object. Lines (0..23) Columns (0..131). 20h is added
Example: draw a box. Upper left corner (5,5) lower right corner (40,15)
　　　Esc m H % % H /

Terminal request

Terminal status　　　　　　　　　　　　　　　　　　　　　Esc e
　　　Response: 000 y C0h 0Dh
　　　　　- y is the local printer status (60h: not ready / 62h: ready)
Cursor position　　　　　　　　　　　　　　　　　　　　　Esc H
　　　Response: Pc Pl C0h 0Dh
　　　　(substract 20h to Pc and Pl)

APPENDIX

The three parts of this section provide information about:
- the available national keyboards,
- the available character sets,
- the default values for programming keys corresponding to the selected predefined set-up,
- dead keys.

A.1 - NATIONAL KEYBOARDS

When a terminal is used in ASCII Mode, a national keyboard must be selected.

The AX3000 Platine terminal provides the following national keyboards:
- USA
- United Kingdom
- France
- Germany
- Spain
- Switzerland (German)
- Switzerland (French)
- Belgium
- Italy
- Portugal
- Netherlands

The national keyboard selection is done through the Terminal Set-Up (<F2> option).

These 11 national keyboard layouts are described in the following.

**U.S.A.**
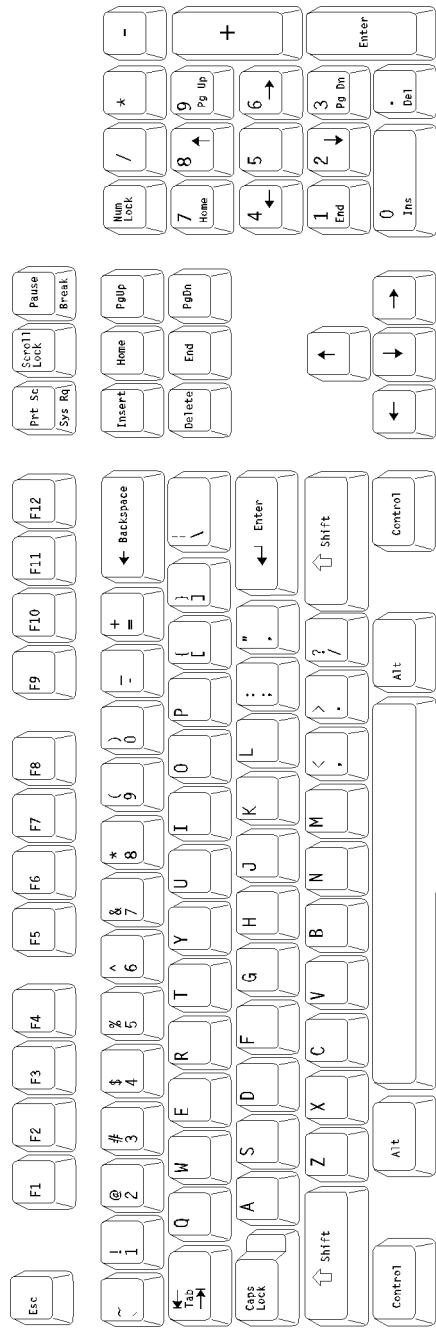
U.K.
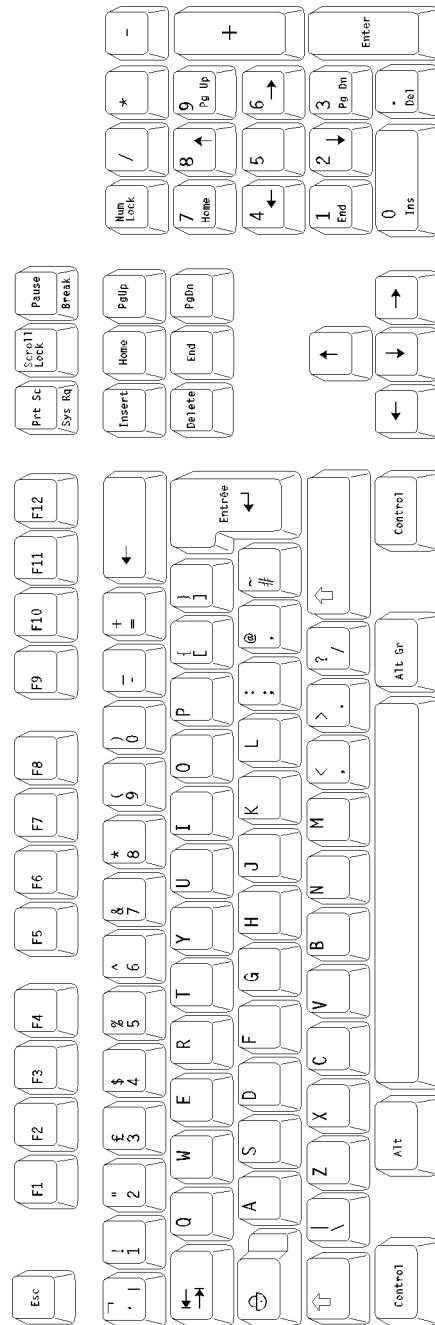
FRANCE
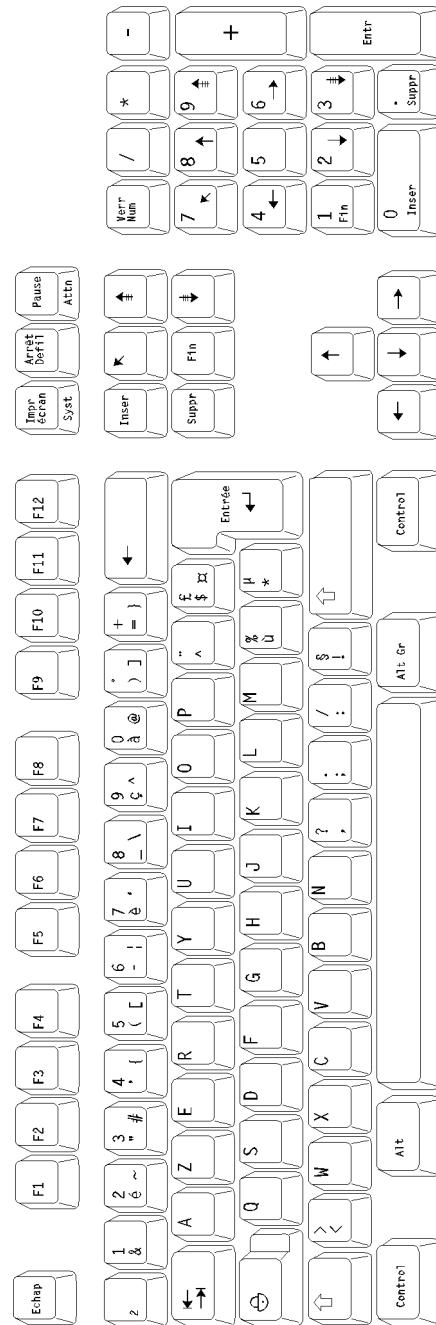
GERMANY
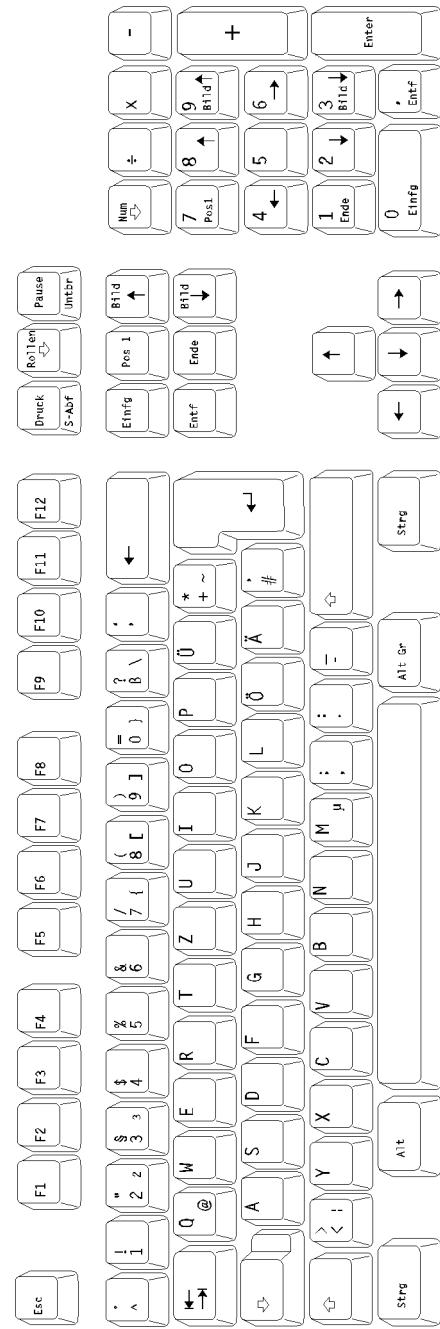
SPAIN
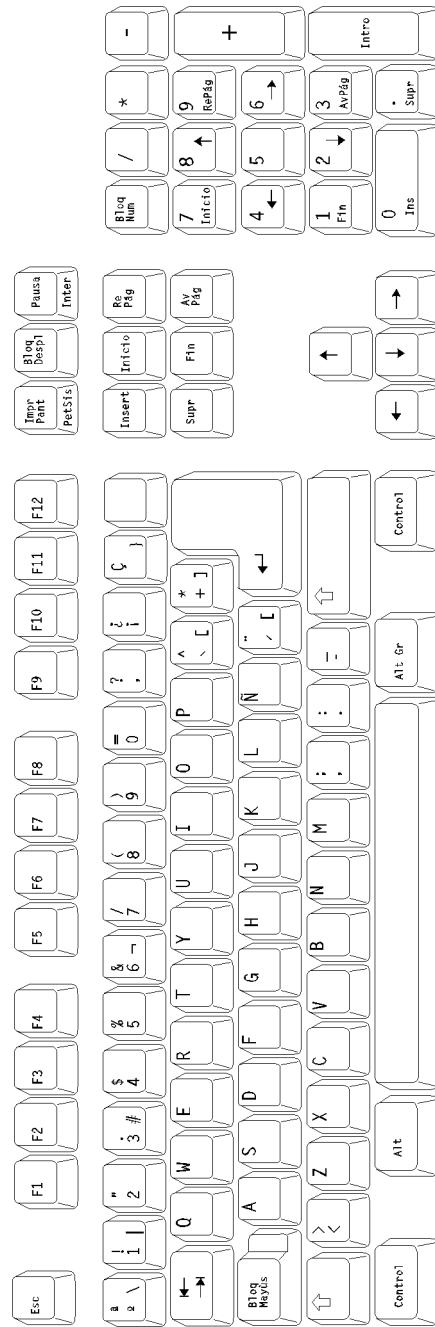
# SWITZERLAND (German)

SWITZERLAND (French)

BELGIUM

ITALY

PORTUGAL

DUTCH
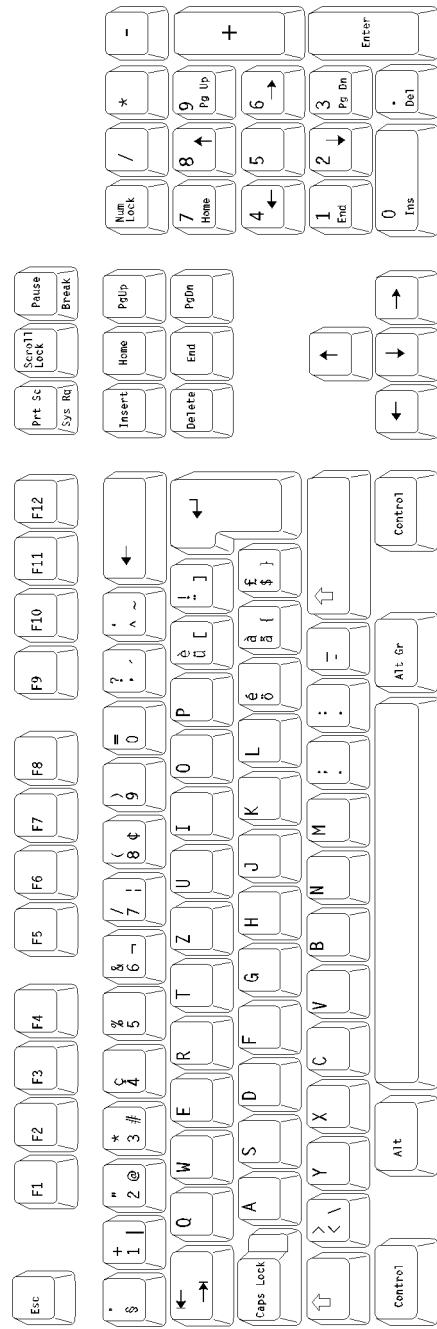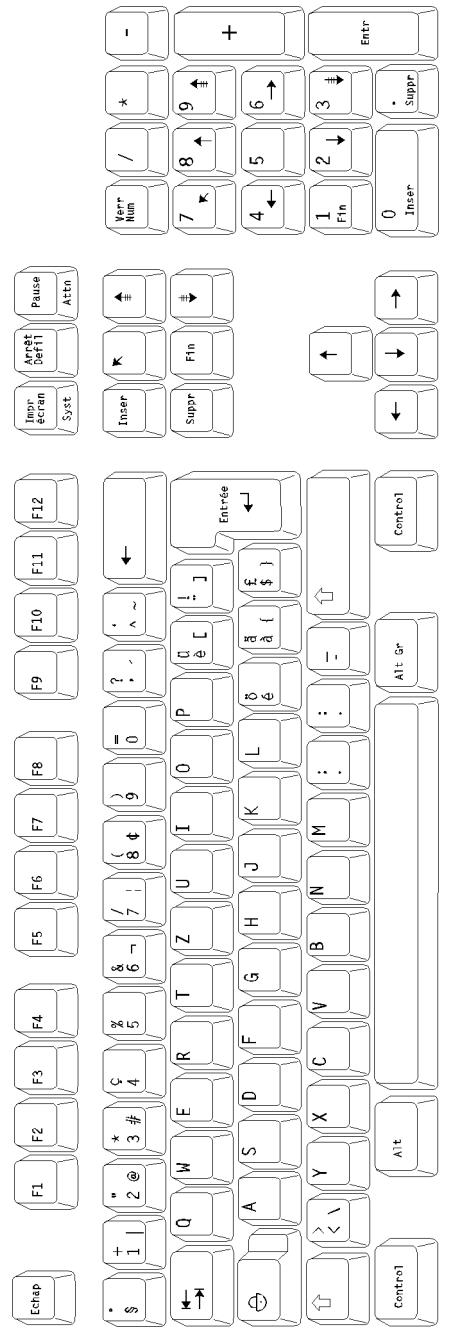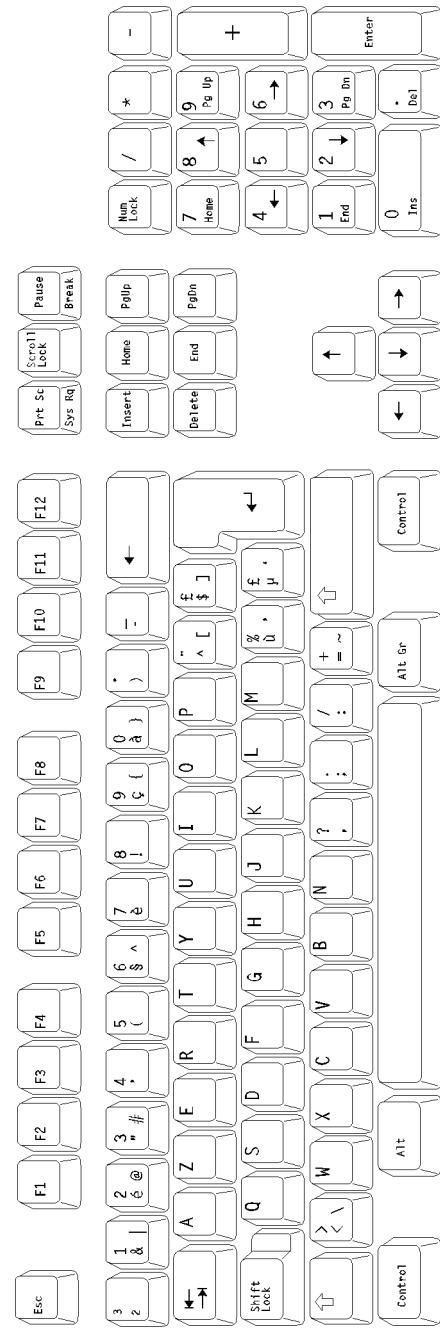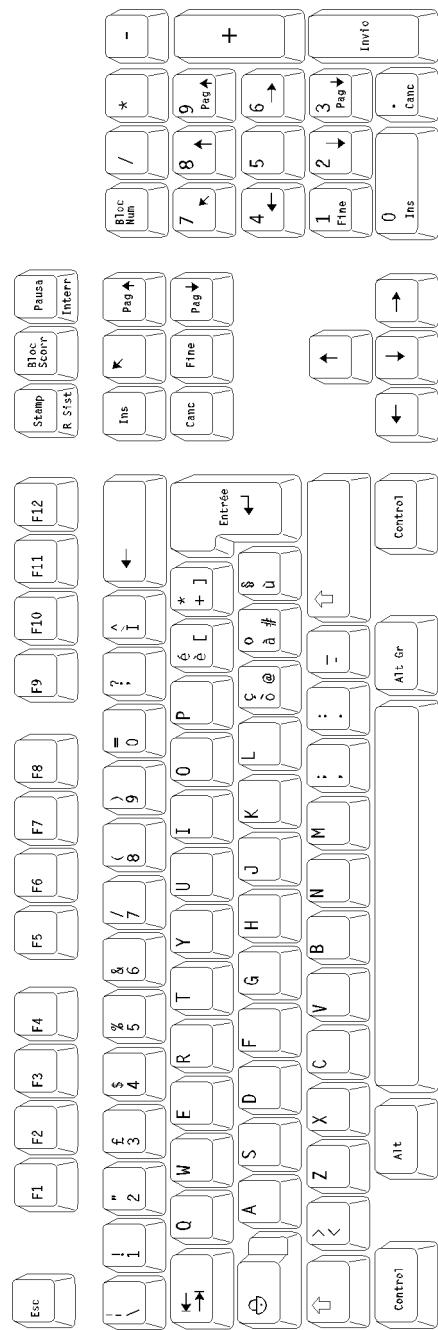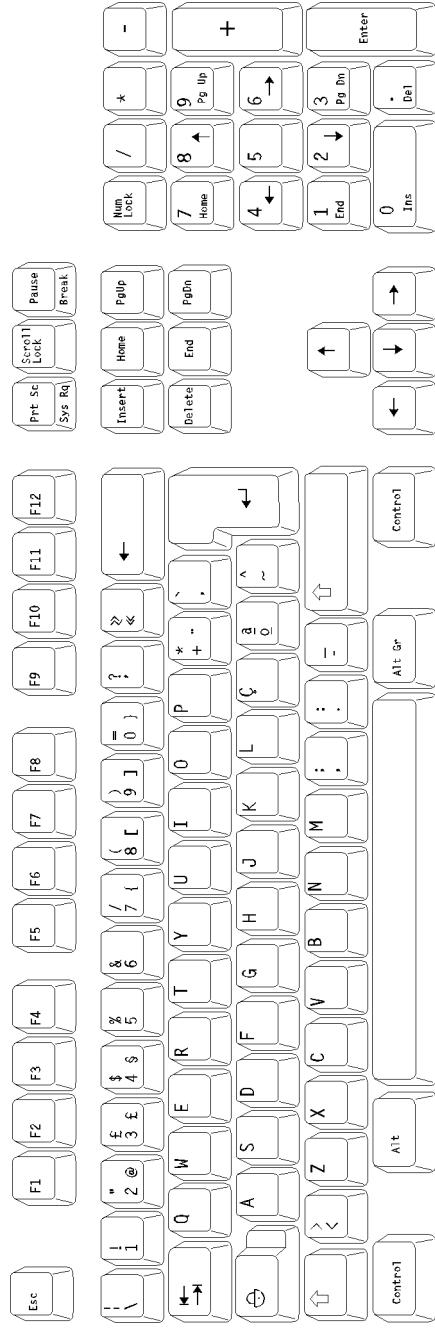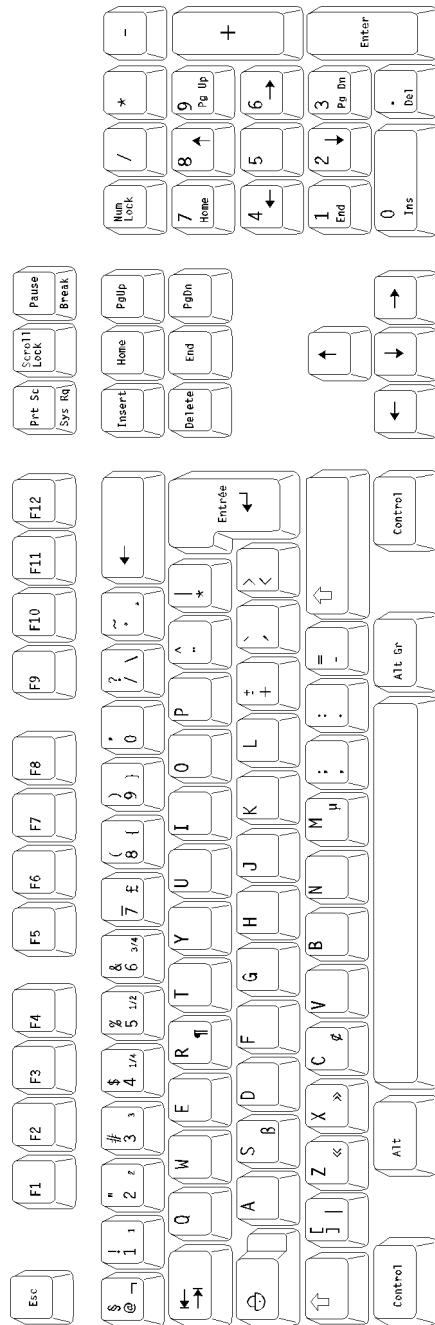
A.2 - CHARACTER SETS

The Platine terminal supports many character sets. The available character sets depend on the selected personality. Two different types of personality (emulation) are available:

- VT220 emulation.
- other: PROLOGUE, ANSI, PCTERM and SM94xx emulations,

The following table codes show all the characters in the available character sets. For each character, the decimal, hexadecimal and octal values are given:

character   A   41   hexadecimal value
                       65   decimal value
                    101   octal value

A.2.1 - ANSI, PROLOGUE, PCTERM and SM94xx EMULATIONS

6 character sets are available with these personalities:
- PC International 437,
- PC Multilingual 850,
- PC Portuguese 860,
- ISO Latin (8859) only for ANSI emulations,
- ISO Latin (8859-SG) only for ANSI emulations,
- National ISO 7-Bit,
- SM9400 only for SM94xx emulation.

The required character set is selected through the set-up (<F2> option).

Note: depending on the emulation used, the ASCII characters from 80h to 9Fh of the ISO Latin 8859 character set differ. For ANSI RS/6000 emulation they are blank characters. For the other emulations, they are listed below.

PC-437 :

	0	1	2	3	4	5	6	7
0		►	SP	0	@	P	`	p
1	☺	◄	!	1	A	Q	a	q
2	☻	↕	"	2	B	R	b	r
3	♥	‼	#	3	C	S	c	s
4	♦	¶	$	4	D	T	d	t
5	♣	§	%	5	E	U	e	u
6	♠	▬	&	6	F	V	f	v
7	•	↨	'	7	G	W	g	w
8	◘	↑	(	8	H	X	h	x
9	○	↓	)	9	I	Y	i	y
A	◙	→	*	:	J	Z	j	z
B	♂	←	+	;	K	[	k	{
C	♀	∟	,	<	L	\	l	|
D	♪	↔	-	=	M	]	m	}
E	♫	▲	.	>	N	^	n	~
F	☼	▼	/	?	O	_	o	⌂

	8	9	A	B	C	D	E	F
0	Ç	É	á	░	└	╨	α	≡
1	ü	æ	í	▒	┴	╤	ß	±
2	é	Æ	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ä	ö	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	å	û	ª	╢	╞	╓	µ	÷
7	ç	ù	º	╖	╟	╫	τ	≈
8	ê	ÿ	¿	╕	╚	╪	Φ	°
9	ë	Ö	⌐	╣	╔	┘	Θ	∙
A	è	Ü	¬	║	╩	┌	Ω	·
B	ï	¢	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	ì	¥	¡	╜	═	▌	ø	²
E	Ä	₧	«	╛	╬	▐	ε	■
F	Å	ƒ	»	┐	╧	▀	∩	

AXEL

PC-850 :

	0	1	2	3	4	5	6	7
0	(00/0/0)	► (10/16/20)	SP (20/32/40)	0 (30/48/60)	@ (40/64/100)	P (50/80/120)	` (60/96/140)	p (70/112/160)
1	☺ (01/1/1)	◄ (11/17/21)	! (21/33/41)	1 (31/49/61)	A (41/65/101)	Q (51/81/121)	a (61/97/141)	q (71/113/161)
2	☻ (02/2/2)	↕ (12/18/22)	" (22/34/42)	2 (32/50/62)	B (42/66/102)	R (52/82/122)	b (62/98/142)	r (72/114/162)
3	♥ (03/3/3)	‼ (13/19/23)	# (23/35/43)	3 (33/51/63)	C (43/67/103)	S (53/83/123)	c (63/99/143)	s (73/115/163)
4	♦ (04/4/4)	¶ (14/20/24)	$ (24/36/44)	4 (34/52/64)	D (44/68/104)	T (54/84/124)	d (64/100/144)	t (74/116/164)
5	♣ (05/5/5)	§ (15/21/25)	% (25/37/45)	5 (35/53/65)	E (45/69/105)	U (55/85/125)	e (65/101/145)	u (75/117/165)
6	♠ (06/6/6)	↨ (16/22/26)	& (26/38/46)	6 (36/54/66)	F (46/70/106)	V (56/86/126)	f (66/102/146)	v (76/118/166)
7	• (07/7/7)	▬ (17/23/27)	' (27/39/47)	7 (37/55/67)	G (47/71/107)	W (57/87/127)	g (67/103/147)	w (77/119/167)
8	◘ (08/8/10)	↑ (18/24/30)	((28/40/50)	8 (38/56/70)	H (48/72/110)	X (58/88/130)	h (68/104/150)	x (78/120/170)
9	○ (09/9/11)	↓ (19/25/31)	) (29/41/51)	9 (39/57/71)	I (49/73/111)	Y (59/89/131)	i (69/105/151)	y (79/121/171)
A	◙ (0A/10/12)	→ (1A/26/32)	* (2A/42/52)	: (3A/58/72)	J (4A/74/112)	Z (5A/90/132)	j (6A/106/152)	z (7A/122/172)
B	♂ (0B/11/13)	← (1B/27/33)	+ (2B/43/53)	; (3B/59/73)	K (4B/75/113)	[(5B/91/133)	k (6B/107/153)	{ (7B/123/173)
C	♀ (0C/12/14)	∟ (1C/28/34)	, (2C/44/54)	< (3C/60/74)	L (4C/76/114)	\ (5C/92/134)	l (6C/108/154)	| (7C/124/174)
D	♪ (0D/13/15)	↔ (1D/29/35)	- (2D/45/55)	= (3D/61/75)	M (4D/77/115)	] (5D/93/135)	m (6D/109/155)	} (7D/125/175)
E	♫ (0E/14/16)	▲ (1E/30/36)	. (2E/46/56)	> (3E/62/76)	N (4E/78/116)	^ (5E/94/136)	n (6E/110/156)	~ (7E/126/176)
F	☼ (0F/15/17)	▼ (1F/31/37)	/ (2F/47/57)	? (3F/63/77)	O (4F/79/117)	_ (5F/95/137)	o (6F/111/157)	⌂ (7F/127/177)

	8	9	A	B	C	D	E	F
0	Ç (80/128/200)	É (90/144/220)	á (A0/160/240)	░ (B0/176/260)	└ (C0/192/300)	ð (D0/208/320)	Ó (E0/224/340)	─ (F0/240/360)
1	ü (81/129/201)	æ (91/145/221)	í (A1/161/241)	▒ (B1/177/261)	┴ (C1/193/301)	Ð (D1/209/321)	ß (E1/225/341)	± (F1/241/361)
2	é (82/130/202)	Æ (92/146/222)	ó (A2/162/242)	▓ (B2/178/262)	┬ (C2/194/302)	Ê (D2/210/322)	Ô (E2/226/342)	= (F2/242/362)
3	â (83/131/203)	ô (93/147/223)	ú (A3/163/243)	│ (B3/179/263)	├ (C3/195/303)	Ë (D3/211/323)	Ò (E3/227/343)	¾ (F3/243/363)
4	ä (84/132/204)	ö (94/148/224)	ñ (A4/164/244)	┤ (B4/180/264)	─ (C4/196/304)	È (D4/212/324)	õ (E4/228/344)	¶ (F4/244/364)
5	à (85/133/205)	ò (95/149/225)	Ñ (A5/165/245)	Á (B5/181/265)	┼ (C5/197/305)	ı (D5/213/325)	Õ (E5/229/345)	§ (F5/245/365)
6	å (86/134/206)	û (96/150/226)	ª (A6/166/246)	Â (B6/182/266)	ã (C6/198/306)	Í (D6/214/326)	µ (E6/230/346)	÷ (F6/246/366)
7	ç (87/135/207)	ù (97/151/227)	º (A7/167/2A7)	À (B7/183/267)	Ã (C7/199/307)	Î (D7/215/327)	þ (E7/231/347)	¸ (F7/247/367)
8	ê (88/136/210)	ÿ (98/152/230)	¿ (A8/168/250)	© (B8/184/270)	╚ (C8/200/310)	Ï (D8/216/330)	Þ (E8/232/350)	° (F8/248/370)
9	ë (89/137/211)	Ö (99/153/231)	® (A9/169/251)	╣ (B9/185/271)	╔ (C9/201/311)	┘ (D9/217/331)	Ú (E9/233/351)	¨ (F9/249/371)
A	è (8A/138/212)	Ü (9A/154/232)	¬ (AA/170/252)	║ (BA/186/272)	╩ (CA/202/312)	┌ (DA/218/332)	Û (EA/234/352)	· (FA/250/372)
B	ï (8B/139/213)	Ø (9B/155/233)	½ (AB/171/253)	╗ (BB/187/273)	╦ (CB/203/313)	█ (DB/219/333)	Ù (EB/235/353)	¹ (FB/251/373)
C	î (8C/140/214)	£ (9C/156/234)	¼ (AC/172/254)	╝ (BC/188/274)	╠ (CC/204/314)	▄ (DC/220/334)	ý (EC/236/354)	² (FC/252/374)
D	ì (8D/141/215)	Ø (9D/157/235)	¡ (AD/173/255)	¢ (BD/189/275)	= (CD/205/315)	¦ (DD/221/335)	Ý (ED/237/355)	³ (FD/253/375)
E	Ä (8E/142/216)	× (9E/158/236)	« (AE/174/256)	¥ (BE/190/276)	╬ (CE/206/316)	Ì (DE/222/336)	¯ (EE/238/356)	■ (FE/254/376)
F	Å (8F/143/217)	ƒ (9F/159/237)	» (AF/175/257)	¬ (BF/191/277)	¤ (CF/207/317)	▀ (DF/223/337)	´ (EF/239/357)	(FF/255/377)

PC-860 :

	0	1	2	3	4	5	6	7
0		►	SP	0	@	P	`	p
1	☺	◄	!	1	A	Q	a	q
2	☻	↕	"	2	B	R	b	r
3	♥	‼	#	3	C	S	c	s
4	♦	¶	$	4	D	T	d	t
5	♣	§	%	5	E	U	e	u
6	♠	▬	&	6	F	V	f	v
7	•	↨	'	7	G	W	g	w
8	◘	↑	(	8	H	X	h	x
9	○	↓	)	9	I	Y	i	y
A	◙	→	*	:	J	Z	j	z
B	♂	←	+	;	K	[	k	{
C	♀	∟	,	<	L	\	l	|
D	♪	↔	-	=	M	]	m	}
E	♫	▲	.	>	N	^	n	~
F	☼	▼	/	?	O	_	o	⌂

	8	9	A	B	C	D	E	F
0	Ç	É	á	░	└	╨	α	≡
1	ü	À	í	▒	┴	╤	ß	±
2	é	È	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ã	õ	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	Á	Ú	ª	╢	╞	╓	µ	÷
7	ç	ù	º	╖	╟	╫	τ	≈
8	ê	Ì	¿	╕	╚	╪	Φ	°
9	Ê	Õ	Ò	╣	╔	┘	Θ	•
A	è	Ü	¬	║	╩	┌	Ω	·
B	Í	¢	½	╗	╦	█	δ	√
C	Ô	£	¼	╝	╠	▄	∞	ⁿ
D	ì	Ù	¡	╜	═	▌	ø	²
E	Ã	₧	«	╛	╬	▐	ε	■
F	Â	Ó	»	┐	╧	▀	∩	

ISO latin (8859):

	0	1	2	3	4	5	6	7
0		►	SP	0	@	P	`	p
1	☺	◄	!	1	A	Q	a	q
2	☻	↕	"	2	B	R	b	r
3	♥	‼	#	3	C	S	c	s
4	♦	¶	$	4	D	T	d	t
5	♣	§	%	5	E	U	e	u
6	♠	↨	&	6	F	V	f	v
7	•	■	'	7	G	W	g	w
8	◘	↑	(	8	H	X	h	x
9	○	↓	)	9	I	Y	i	y
A	◙	→	*	:	J	Z	j	z
B	♂	←	+	;	K	[	k	{
C	♀	∟	,	<	L	\	l	|
D	♪	↔	-	=	M	]	m	}
E	♫	▲	.	>	N	^	n	~
F	☼	▼	/	?	O	_	o	⌂

	8	9	A	B	C	D	E	F
0		—		°	À	Ð	à	ð
1	♦	—	¡	±	Á	Ñ	á	ñ
2	▦	—	¢	²	Â	Ò	â	ò
3	¶	—	£	³	Ã	Ó	ã	ó
4	¶	—	¤	´	Ä	Ô	ä	ô
5	¶	├	¥	µ	Å	Õ	å	õ
6	¶	┤	¦	¶	Æ	Ö	æ	ö
7	°	┴	§	·	Ç	×	ç	÷
8	±	┬	¨	¸	È	Ø	è	ø
9	¶	│	©	¹	É	Ù	é	ù
A	¶	≤	ª	º	Ê	Ú	ê	ú
B	┘	≥	«	»	Ë	Û	ë	û
C	┐	∏	¬	¼	Ì	Ü	ì	ü
D	┌	≠		½	Í	Ý	í	ý
E	└	£	®	¾	Î	Þ	î	Þ
F	┼	·	‾	¿	Ï	ß	ï	ÿ

ISO latin (8859-SG):

	0	1	2	3	4	5	6	7
0	α		SP	0	@	P	`	p
1	Γ		!	1	A	Q	a	q
2	π		"	2	B	R	b	r
3	Σ	│	#	3	C	S	c	s
4	σ	⊣	$	4	D	T	d	t
5	τ	⊧	%	5	E	U	e	u
6	Φ	⊩	&	6	F	V	f	v
7	Θ	⊓	'	7	G	W	g	w
8	Ω	⊐	(	8	H	X	h	x
9	δ	⊩	)	9	I	Y	i	y
A	∞	‖	*	:	J	Z	j	z
B	ε	⊓	+	;	K	[	k	{
C	∩	⊔	,	<	L	\	l	|
D	ÿ	⊔	-	=	M	]	m	}
E	Pt	⊣	.	>	N	^	n	~
F	ƒ	⊐	/	?	O	_	o	Δ

	8	9	A	B	C	D	E	F
0	└	╨		°	À	Ð	à	ð
1	┴	╤	¡	±	Á	Ñ	á	ñ
2	┬	╥	¢	²	Â	Ò	â	ò
3	├	╙	£	³	Ã	Ó	ã	ó
4	─	╘	¤	´	Ä	Ô	ä	ô
5	┼	╒	¥	µ	Å	Õ	å	õ
6	╞	╓	¦	¶	Æ	Ö	æ	ö
7	╟	╫	§	·	Ç	×	ç	÷
8	╚	╪	¨	¸	È	Ø	è	ø
9	╔	┘	©	¹	É	Ù	é	ù
A	╩	┌	ª	º	Ê	Ú	ê	ú
B	╦	█	«	»	Ë	Û	ë	û
C	╠	▄	¬	¼	Ì	Ü	ì	ü
D	═	▌		½	Í	Ý	í	ý
E	╬	▐	®	¾	Î	Þ	î	þ
F	┴	▀	¯	¿	Ï	ß	ï	ÿ

National ISO 7-Bit:

Many characters of the National ISO 7-Bit set are dependent of the national keyboard selected through the Terminal Set-Up.

This is the character set associated with the US keyboard:

	0	1	2	3	4	5	6	7
0	NUL 00/0/0	DLE 10/16/20	SP 20/32/40	0 30/48/60	@ 40/64/100	P 50/80/120	` 60/96/140	p 70/112/160
1	SOH 01/1/1	DC1 11/17/21	! 21/33/41	1 31/49/61	A 41/65/101	Q 51/81/121	a 61/97/141	q 71/113/161
2	STX 02/2/2	DC2 12/18/22	" 22/34/42	2 32/50/62	B 42/66/102	R 52/82/122	b 62/98/142	r 72/114/162
3	ETX 03/3/3	DC3 13/19/23	# 23/35/43	3 33/51/63	C 43/67/103	S 53/83/123	c 63/99/143	s 73/115/163
4	EOT 04/4/4	DC4 14/20/24	$ 24/36/44	4 34/52/64	D 44/68/104	T 54/84/124	d 64/100/144	t 74/116/164
5	ENQ 05/5/5	NAK 15/21/25	% 25/37/45	5 35/53/65	E 45/69/105	U 55/85/125	e 65/101/145	u 75/117/165
6	ACK 06/6/6	SYN 16/22/26	& 26/38/46	6 36/54/66	F 46/70/106	V 56/86/126	f 66/102/146	v 76/118/166
7	BEL 07/7/7	ETB 17/23/27	' 27/39/47	7 37/55/67	G 47/71/107	W 57/87/127	g 67/103/147	w 77/119/167
8	BS 08/8/10	CAN 18/24/30	(28/40/50	8 38/56/70	H 48/72/110	X 58/88/130	h 68/104/150	x 78/120/170
9	HT 09/9/11	EM 19/25/31	) 29/41/51	9 39/57/71	I 49/73/111	Y 59/89/131	i 69/105/151	y 79/121/171
A	LF 0A/10/12	SUB 1A/26/32	* 2A/42/52	: 3A/58/72	J 4A/74/112	Z 5A/90/132	j 6A/106/152	z 7A/122/172
B	VT 0B/11/13	ESC 1B/27/33	+ 2B/43/53	; 3B/59/73	K 4B/75/113	[5B/91/133	k 6B/107/153	{ 7B/123/173
C	FF 0C/12/14	FS 1C/28/34	, 2C/44/54	< 3C/60/74	L 4C/76/114	\ 5C/92/134	l 6C/108/154	| 7C/124/174
D	CR 0D/13/15	GS 1D/29/35	- 2D/45/55	= 3D/61/75	M 4D/77/115	] 5D/93/135	m 6D/109/155	} 7D/125/175
E	SO 0E/14/16	RS 1E/30/36	. 2E/46/56	> 3E/62/76	N 4E/78/116	^ 5E/94/136	n 6E/110/156	~ 7E/126/176
F	SI 0F/15/17	US 1F/31/37	/ 2F/47/57	? 3F/63/77	O 4F/79/117	_ 5F/95/137	o 6F/111/157	7F/127/177

The following table shows the characters that differ from the National set (US keyboard):

	Hexadecimal code of the replaced characters											
	23	40	5B	5C	5D	5E	5F	60	7B	7C	7D	7E
France	£	à	°	ç	§	^	_	`	é	ù	è	¨
Germany	#	§	Ä	Ö	Ü	^	_	`	ä	ö	ü	ß
Italy	£	§	°	ç	é	^	_	ù	à	ò	è	ì
Spain	£	§	¡	Ñ	¿	^	_	`	°	ñ	ç	~
Switzerland	ù	à	é	ç	ê	î	è	ô	ä	ö	ü	û
Portugal	#	@	Ã	Ç	Õ	^	_	`	ã	ç	õ	~

SM9400 :

	0	1	2	3	4	5	6	7
0			SP	0	@	P	`	p
1			!	1	A	Q	a	q
2			"	2	B	R	b	r
3			#	3	C	S	c	s
4			$	4	D	T	d	t
5			%	5	E	U	e	u
6			&	6	F	V	f	v
7			'	7	G	W	g	w
8			(	8	H	X	h	x
9			)	9	I	Y	i	y
A			∗	:	J	Z	j	z
B			+	;	K	[	k	{
C			,	<	L	\	l	|
D			-	=	M	]	m	}
E			.	>	N	^	n	~
F			/	?	O	_	o	

	8	9	A	B	C	D	E	F
0			Å	æ	Ø	⌐	⌐	F0
1			Ä	Ç	œ	L	|	F1
2			Æ	é	ú	⊢	L	F2
3			Ç	è	ù	⊢	—	F3
4			É	ê	û	⌐	|	F4
5			Ñ	ë	ü	L	|	F5
6			Ö	í	ß	L	⊢	F6
7			Ø	ì	µ	∎	∎	F7
8			Œ	î	°	⊩		F8
9			Ł	ï	§	∎		F9
A			Ü	ĺ·	±	▬		FA
B			á	ñ	¡	⌐		FB
C			à	ó	¿	→		FC
D			â	ò	£	←		FD
E			å	ô	¨	↑		FE
F			ä	ö	Ã	↓		FF

A.2.2 - VT220 EMULATION

The VT220 emulation allows a 8-bit character set (256 characters) to be built from two 7-bit character sets (128 characters).

These 7-bit character sets are composed of 32 non-display control characters (called C0 and C1) and 94 display characters (called GL and GR).

A 8-bit character set is composed of:
- C0: control characters (ASCII codes from 00h to 1Fh),
- GL: graphic left (ASCII codes from 20h to 7Fh),
- C1: control characters (ASCII codes from 80h to 9Fh),
- GR: graphic right (ASCII codes from A0h to FFh).

The Platine terminal provides nine 7-bit character sets (described in the following pages):
- ASCII,
- 6 national replacement character sets (NRCs),
- DEC Multinational,
- DEC Special Graphic.

To use character sets, the following operations are performed:
- Map 4 character sets to the 4 available tables (G0, G1, G2 and G3).
- Map two tables (G0, G1, G2 or G3) to GL and GR.

When the AX3000 is switched on, the GL, GR, G0, G1, G2 and G3 tables are initialized according to the character set selected through the Terminal Set-Up:
- **DEC Multinational:**   GL and G0: ASCII set,
                             GR, G1, G2 and G3: DEC Multinational set.
- **National ISO 7-BIT:**   GL and G0: NRCs (according to the
                             selected   keyboard)
                             GR, G1, G2 and G3: unknown

The following diagram shows the mechanisms for designating and mapping character sets:
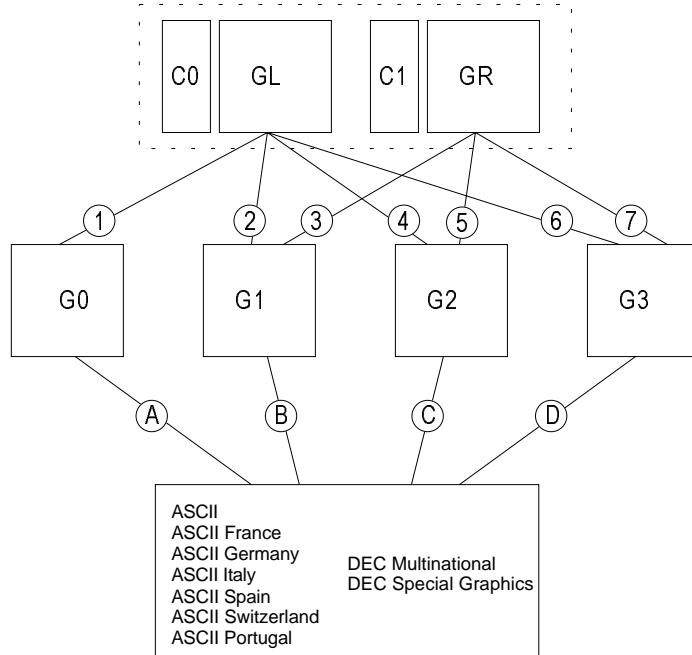
The following escape sequences are used to designate and map character sets (where x represents the character set code):

(A): Esc (x	**(1)**: 0Fh
(B): Esc) x	**(2)**: 0Eh
(C): Esc * x	**(3)**: Esc ~
(D): Esc + x	**(4)**: Esc n
	(5): Esc }
	(6): Esc o
	(7): Esc	

x values: Ps = B (ASCII)   Ps = R (French)   Ps = < (DEC multinational)
           Ps = K (German)   Ps = Y (Italian)   Ps = 0 (DEC special graphics)
           Ps = Z (Spanish)   Ps = = (Swiss)   Ps = %6 (Portuguese)

The following describes the 9 available character sets (these sets can be mapped either to GL or GR):

ASCII
(C0 & GL)

	0	1	2	3	4	5	6	7
0	NUL	DLE	SP	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	

This table shows the characters in each NRC set that differ from the ASCII set:

	Hexadecimal code of the replaced characters											
	23	40	5B	5C	5D	5E	5F	60	7B	7C	7D	7E
France	£	à	°	ç	§	^	_	`	é	ù	è	¨
Germany	#	§	Ä	Ö	Ü	^	_	`	ä	ö	ü	ß
Italy	£	§	°	ç	é	^	_	ù	à	ò	è	ì
Spain	£	§	¡	Ñ	¿	^	_	`	°	ñ	ç	~
Switzerland	ù	à	é	ç	ê	î	è	ô	ä	ö	ü	û
Portugal	#	@	Ã	Ç	Õ	^	_	`	ã	ç	õ	~

DEC Multinational
(C1 & GR)

	8	9	A	B	C	D	E	F
0	(80/128/200)	DCS (90/144/220)	(A0/160/240)	° (B0/176/260)	À (C0/192/300)	ʕ (D0/208/320)	à (E0/224/340)	ʕ (F0/240/360)
1	(81/129/201)	PU1 (91/145/221)	¡ (A1/161/241)	± (B1/177/261)	Á (C1/193/301)	Ñ (D1/209/321)	á (E1/225/341)	ñ (F1/241/361)
2	(82/130/202)	PU2 (92/146/222)	¢ (A2/162/242)	² (B2/178/262)	Â (C2/194/302)	Ò (D2/210/322)	â (E2/226/342)	ò (F2/242/362)
3	(83/131/203)	STS (93/147/223)	£ (A3/163/243)	³ (B3/179/263)	Ã (C3/195/303)	Ó (D3/211/323)	ã (E3/227/343)	ó (F3/243/363)
4	IND (84/132/204)	CCH (94/148/224)	ʕ (A4/164/244)	ʕ (B4/180/264)	Ä (C4/196/304)	Ô (D4/212/324)	ä (E4/228/344)	ô (F4/244/364)
5	NEL (85/133/205)	MW (95/149/225)	¥ (A5/165/245)	µ (B5/181/265)	Å (C5/197/305)	Õ (D5/213/325)	å (E5/229/345)	õ (F5/245/365)
6	SSA (86/134/206)	SPA (96/150/226)	ʕ (A6/166/246)	¶ (B6/182/266)	Æ (C6/198/306)	Ö (D6/214/326)	æ (E6/230/346)	ö (F6/246/366)
7	ESA (87/135/207)	EPA (97/151/227)	§ (A7/167/2A7)	· (B7/183/267)	Ç (C7/199/307)	Œ (D7/215/327)	ç (E7/231/347)	œ (F7/247/367)
8	HTS (88/136/210)	(98/152/230)	¤ (A8/168/250)	ʕ (B8/184/270)	È (C8/200/310)	Ø (D8/216/330)	è (E8/232/350)	ø (F8/248/370)
9	HTJ (89/137/211)	(99/153/231)	© (A9/169/251)	¹ (B9/185/271)	É (C9/201/311)	Ù (D9/217/331)	é (E9/233/351)	ù (F9/249/371)
A	VTS (8A/138/212)	(9A/154/232)	ª (AA/170/252)	º (BA/186/272)	Ê (CA/202/312)	Ú (DA/218/332)	ê (EA/234/352)	ú (FA/250/372)
B	PLD (8B/139/213)	CSI (9B/155/233)	« (AB/171/253)	» (BB/187/273)	Ë (CB/203/313)	Û (DB/219/333)	ë (EB/235/353)	û (FB/251/373)
C	PLU (8C/140/214)	ST (9C/156/234)	ʕ (AC/172/254)	¼ (BC/188/274)	Ì (CC/204/314)	Ü (DC/220/334)	ì (EC/236/354)	ü (FC/252/374)
D	RI (8D/141/215)	OSC (9D/157/235)	ʕ (AD/173/255)	½ (BD/189/275)	Í (CD/205/315)	Ÿ (DD/221/335)	í (ED/237/355)	ÿ (FD/253/375)
E	SS2 (8E/142/216)	PM (9E/158/236)	ʕ (AE/174/256)	ʕ (BE/190/276)	Î (CE/206/316)	ʕ (DE/222/336)	î (EE/238/356)	ʕ (FE/254/376)
F	SS3 (8F/143/217)	APC (9F/159/237)	ʕ (AF/175/257)	¿ (BF/191/277)	Ï (CF/207/317)	ß (DF/223/337)	ï (EF/239/357)	(FF/255/377)

DEC Special Graphic
(C0 & GL)

	0	1	2	3	4	5	6	7
0	NUL (0/0/0)	DLE (10/16/20)	SP (20/32/40)	0 (30/48/60)	@ (40/64/100)	P (50/80/120)	♦ (60/96/140)	– (70/112/160)
1	SOH (1/1/1)	DC1 (11/17/21)	! (21/33/41)	1 (31/49/61)	A (41/65/101)	Q (51/81/121)	▦ (61/97/141)	– (71/113/161)
2	STX (2/2/2)	DC2 (12/18/22)	" (22/34/42)	2 (32/50/62)	B (42/66/102)	R (52/82/122)	(62/98/142)	– (72/114/162)
3	ETX (3/3/3)	DC3 (13/19/23)	# (23/35/43)	3 (33/51/63)	C (43/67/103)	S (53/83/123)	(63/99/143)	— (73/115/163)
4	EOT (4/4/4)	DC4 (14/20/24)	$ (24/36/44)	4 (34/52/64)	D (44/68/104)	T (54/84/124)	(64/100/144)	├ (74/116/164)
5	ENQ (5/5/5)	NAK (15/21/25)	% (25/37/45)	5 (35/53/65)	E (45/69/105)	U (55/85/125)	(65/101/145)	┤ (75/117/165)
6	ACK (6/6/6)	SYN (16/22/26)	& (26/38/46)	6 (36/54/66)	F (46/70/106)	V (56/86/126)	° (66/102/146)	┴ (76/118/166)
7	BEL (7/7/7)	ETB (17/23/27)	' (27/39/47)	7 (37/55/67)	G (47/71/107)	W (57/87/127)	± (67/103/147)	┬ (77/119/167)
8	BS (8/8/10)	CAN (18/24/30)	((28/40/50)	8 (38/56/70)	H (48/72/110)	X (58/88/130)	(68/104/150)	│ (78/120/170)
9	HT (9/9/11)	EM (19/25/31)	) (29/41/51)	9 (39/57/71)	I (49/73/111)	Y (59/89/131)	(69/105/151)	≤ (79/121/171)
A	LF (A/10/12)	SUB (1A/26/32)	* (2A/42/52)	: (3A/58/72)	J (4A/74/112)	Z (5A/90/132)	⌟ (6A/106/152)	≥ (7A/122/172)
B	VT (B/11/13)	ESC (1B/27/33)	+ (2B/43/53)	; (3B/59/73)	K (4B/75/113)	[(5B/91/133)	┐ (6B/107/153)	∏ (7B/123/173)
C	FF (C/12/14)	FS (1C/28/34)	, (2C/44/54)	< (3C/60/74)	L (4C/76/114)	\ (5C/92/134)	┌ (6C/108/154)	≠ (7C/124/174)
D	CR (D/13/15)	GS (1D/29/35)	- (2D/45/55)	= (3D/61/75)	M (4D/77/115)	] (5D/93/135)	└ (6D/109/155)	£ (7D/125/175)
E	SO (E/14/16)	RS (1E/30/36)	. (2E/46/56)	> (3E/62/76)	N (4E/78/116)	^ (5E/94/136)	┼ (6E/110/156)	· (7E/126/176)
F	SI (F/15/17)	US (1F/31/37)	/ (2F/47/57)	? (3F/63/77)	O (4F/79/117)	(5F/95/137)	— (6F/111/157)	(7F/127/177)

A.3 - PROGRAMMING KEYS

AXEL's built-in predefined set-ups automatically set all standard terminal parameters to match the selected operating system.

Automatic configuration sets both the 'standard' terminal parameters (emulation, number of lines, screen modes, etc) and also the values of the available programming function keys.

Up to 61 programming keys (48 function keys plus the numeric keypad) are updated in this way.

Default values for the programming keys for PROLOGUE, ANSI, PCTERM and VT220 emulations are listed in the tables on the following pages.

Note: in the following tables, the **'N°'** column is the function key number (AX3000's set-up), the **'Keystroke'** column is the associated keystroke and the '**Value'** column is the corresponding default value.

A.3.1 - NATIVE EMULATIONS

The next page lists the default values for the programming keys for the native emulations.

Note: the function keys for the native emulations comprise 4 sets of 10 function keys, so some function keys have identical values (<F11> and <SHIFT><F1> are equivalent, <F12> and <SHIFT><F2> are equivalent, <SHIFT><F11> and <CTRL><F1> are equivalent, etc).

PROLOGUE 2/3, PROLOGUE 4/5 and TWINSERVER:

N°	Keystroke	Value
F1	F1	01h 80h 0Dh
F2	F2	01h 81h 0Dh
F3	F3	01h 82h 0Dh
F4	F4	01h 83h 0Dh
F5	F5	01h 84h 0Dh
F6	F6	01h 85h 0Dh
F7	F7	01h 86h 0Dh
F8	F8	01h 87h 0Dh
F9	F9	01h 88h 0Dh
F10	F10	01h 89h 0Dh
F11	Shift+F1	01h 8Ah 0Dh
F12	Shift+F2	01h 8Bh 0Dh
F13	Shift+F3	01h 8Ch 0Dh
F14	Shift+F4	01h 8Dh 0Dh
F15	Shift+F5	01h 8Eh 0Dh
F16	Shift+F6	01h 8Fh 0Dh
F17	Shift+F7	01h 90h 0Dh
F18	Shift+F8	01h 91h 0Dh
F19	Shift+F9	01h 92h 0Dh
F20	Shift+F10	01h 93h 0Dh
F21	Ctrl+F1	01h 94h 0Dh
F22	Ctrl+F2	01h 95h 0Dh
F23	Ctrl+F3	01h 96h 0Dh
F24	Ctrl+F4	01h 97h 0Dh
F25	Ctrl+F5	01h 98h 0Dh
F26	Ctrl+F6	01h 99h 0Dh
F27	Ctrl+F7	01h 9Ah 0Dh
F28	Ctrl+F8	01h 9Bh 0Dh
F29	Ctrl+F9	01h 9Ch 0Dh
F30	Ctrl+F10	01h 9Dh 0Dh

N°	Keystroke	Value
F31	Alt+F1	01h 9Eh 0Dh
F32	Alt+F2	01h 9Fh 0Dh
F33	Alt+F3	01h A0h 0Dh
F34	Alt+F4	01h A1h 0Dh
F35	Alt+F5	01h A2h 0Dh
F36	Alt+F6	01h A3h 0Dh
F37	Alt+F7	01h A4h 0Dh
F38	Alt+F8	01h A5h 0Dh
F39	Alt+F9	01h A6h 0Dh
F40	Alt+F10	01h A7h 0Dh

N°	Keystroke	Value
F49	<Home>	1Ch
F50	<Up>	0Bh
F51	<PgUp>	12h
F52	<->	2Dh
F53	<Left>	08h
F54	<5>	---
F55	<Right>	06h
F56	<+>	2Bh
F57	<End>	02h
F58	<Down>	05h
F59	<PgDn>	03h
F60	<Ins>	0Fh
F61	<Del>	7Fh

$\mathcal{A}\times\mathsf{EL}$

A.3.2 - ANSI EMULATIONS

ANSI, ANSI DOS, UNIX SCO 3.2.2, UNIX SCO 3.2.4, SCO OPENSERVER and XENIX SCO:

N°	Keystroke	Value
F1	F1	Esc [M
F2	F2	Esc [N
F3	F3	Esc [O
F4	F4	Esc [P
F5	F5	Esc [Q
F6	F6	Esc [R
F7	F7	Esc [S
F8	F8	Esc [T
F9	F9	Esc [U
F10	F10	Esc [V
F11	F11	Esc [W
F12	F12	Esc [X
F13	Shift+F1	Esc [Y
F14	Shift+F2	Esc [Z
F15	Shift+F3	Esc [a
F16	Shift+F4	Esc [b
F17	Shift+F5	Esc [c
F18	Shift+F6	Esc [d
F19	Shift+F7	Esc [e
F20	Shift+F8	Esc [f
F21	Shift+F9	Esc [g
F22	Shift+F10	Esc [h
F23	Shift+F11	Esc [i
F24	Shift+F12	Esc [j
F25	Ctrl+F1	Esc [k
F26	Ctrl+F2	Esc [l
F27	Ctrl+F3	Esc [m
F28	Ctrl+F4	Esc [n
F29	Ctrl+F5	Esc [o
F30	Ctrl+F6	Esc [p

N°	Keystroke	Value
F31	Ctrl+F7	Esc [q
F32	Ctrl+F8	Esc [r
F33	Ctrl+F9	Esc [s
F34	Ctrl+F10	Esc [t
F35	Ctrl+F11	Esc [u
F36	Ctrl+F12	Esc [v
F37	Ctrl+Shift+F1	Esc [w
F38	Ctrl+Shift+F2	Esc [x
F39	Ctrl+Shift+F3	Esc [y
F40	Ctrl+Shift+F4	Esc [z
F41	Ctrl+Shift+F5	Esc [[
F42	Ctrl+Shift+F6	Esc [@
F43	Ctrl+Shift+F7	Esc [\
F44	Ctrl+Shift+F8	Esc []
F45	Ctrl+Shift+F9	Esc [^
F46	Ctrl+Shift+F10	Esc [_
F47	Ctrl+Shift+F11	Esc [`
F48	Ctrl+Shift+F12	Esc [{
F49	<Home>	Esc [H
F50	<Up>	Esc [A
F51	<PgUp>	Esc [I
F52	<->	2Dh
F53	<Left>	Esc [D
F54	<5>	Esc [E
F55	<Right>	Esc [C
F56	<+>	2Bh
F57	<End>	Esc [F
F58	<Down>	Esc [B
F59	<PgDn>	Esc [G
F60	<Ins>	Esc [L
F61	<Del>	7Fh

ANSI RS/6000:

N°	Keystroke	Value	N°	Keystroke	Value
F1	F1	Esc [001q	F31	Ctrl+F7	Esc [031q
F2	F2	Esc [002q	F32	Ctrl+F8	Esc [032q
F3	F3	Esc [003q	F33	Ctrl+F9	Esc [033q
F4	F4	Esc [004q	F34	Ctrl+F10	Esc [034q
F5	F5	Esc [005q	F35	Ctrl+F11	Esc [035q
F6	F6	Esc [006q	F36	Ctrl+F12	Esc [036q
F7	F7	Esc [007q			
F8	F8	Esc [008q			
F9	F9	Esc [009q			
F10	F10	Esc [010q			
F11	F11	Esc [011q	N°	Keystroke	Value
F12	F12	Esc [012q	F49	<Home>	Esc [H
F13	Shift+F1	Esc [013q	F50	<Up>	Esc [A
F14	Shift+F2	Esc [014q	F51	<PgUp>	Esc [150q
F15	Shift+F3	Esc [015q	F52	<->	2Dh
F16	Shift+F4	Esc [016q	F53	<Left>	Esc [D
F17	Shift+F5	Esc [017q	F54	<5>	Esc [E
F18	Shift+F6	Esc [018q	F55	<Right>	Esc [C
F19	Shift+F7	Esc [019q	F56	<+>	2Bh
F20	Shift+F8	Esc [020q	F57	<End>	Esc [146q
F21	Shift+F9	Esc [021q	F58	<Down>	Esc [B
F22	Shift+F10	Esc [022q	F59	<PgDn>	Esc [154q
F23	Shift+F11	Esc [023q	F60	<Ins>	Esc [139q
F24	Shift+F12	Esc [024q	F61	<Del>	7Fh
F25	Ctrl+F1	Esc [025q			
F26	Ctrl+F2	Esc [026q			
F27	Ctrl+F3	Esc [027q			
F28	Ctrl+F4	Esc [028q			
F29	Ctrl+F5	Esc [029q			
F30	Ctrl+F6	Esc [030q			

ANSI INTERACTIVE / UNIX SVR4:

N°	Keystroke	Value
F1	F1	Esc OP
F2	F2	Esc OQ
F3	F3	Esc OR
F4	F4	Esc OS
F5	F5	Esc OT
F6	F6	Esc OU
F7	F7	Esc OV
F8	F8	Esc OW
F9	F9	Esc OX
F10	F10	Esc OY
F11	F11	Esc OZ
F12	F12	Esc OA
F13	Shift+F1	Esc Op
F14	Shift+F2	Esc Oq
F15	Shift+F3	Esc Or
F16	Shift+F4	Esc Os
F17	Shift+F5	Esc Ot
F18	Shift+F6	Esc Ou
F19	Shift+F7	Esc Ov
F20	Shift+F8	Esc Ow
F21	Shift+F9	Esc Ox
F22	Shift+F10	Esc Oy
F23	Shift+F11	Esc Oz
F24	Shift+F12	Esc Oa
F25	Ctrl+F1	Esc OP
F26	Ctrl+F2	Esc OQ
F27	Ctrl+F3	Esc OR
F28	Ctrl+F4	Esc OS
F29	Ctrl+F5	Esc OT
F30	Ctrl+F6	Esc OU

N°	Keystroke	Value
F31	Ctrl+F7	Esc OV
F32	Ctrl+F8	Esc OW
F33	Ctrl+F9	Esc OX
F34	Ctrl+F10	Esc OY
F35	Ctrl+F11	Esc OZ
F36	Ctrl+F12	Esc OA
F37	Ctrl+Shift+F1	1Fh
F38	Ctrl+Shift+F2	---
F39	Ctrl+Shift+F3	Esc Or
F40	Ctrl+Shift+F4	Esc Os
F41	Ctrl+Shift+F5	Esc Ot
F42	Ctrl+Shift+F6	Esc Ou
F43	Ctrl+Shift+F7	Esc Ov
F44	Ctrl+Shift+F8	Esc Ow
F45	Ctrl+Shift+F9	Esc Ox
F46	Ctrl+Shift+F10	Esc Oy
F47	Ctrl+Shift+F11	Esc Oz
F48	Ctrl+Shift+F12	Esc Oa
F49	<Home>	Esc [H
F50	<Up>	Esc [A
F51	<PgUp>	Esc [V
F52	<->	Esc [S
F53	<Left>	Esc [D
F54	<5>	Esc [G
F55	<Right>	Esc [C
F56	<+>	Esc [T
F57	<End>	Esc [Y
F58	<Down>	Esc [B
F59	<PgDn>	Esc [U
F60	<Ins>	Esc [@
F61	<Del>	7Fh

ANSI MOS:

N°	Keystroke	Value
F1	F1	Esc '
F2	F2	Esc a
F3	F3	Esc b
F4	F4	Esc c
F5	F5	Esc d
F6	F6	Esc e
F7	F7	Esc f
F8	F8	Esc g
F9	F9	Esc h
F10	F10	Esc i
F11	F11	Esc j
F12	F12	Esc k
F13	Shift+F1	Esc p
F14	Shift+F2	Esc q
F15	Shift+F3	Esc r
F16	Shift+F4	Esc s
F17	Shift+F5	Esc t
F18	Shift+F6	Esc u
F19	Shift+F7	Esc v
F20	Shift+F8	Esc w
F21	Shift+F9	Esc x
F22	Shift+F10	Esc y
F23	Shift+F11	Esc z
F24	Shift+F12	Esc {
F25	Ctrl+F1	Esc [k
F26	Ctrl+F2	Esc [l
F27	Ctrl+F3	Esc [m
F28	Ctrl+F4	Esc [n
F29	Ctrl+F5	Esc [o
F30	Ctrl+F6	Esc [p

N°	Keystroke	Value
F31	Ctrl+F7	Esc [q
F32	Ctrl+F8	Esc [r
F33	Ctrl+F9	Esc [s
F34	Ctrl+F10	Esc [t
F35	Ctrl+F11	Esc [u
F36	Ctrl+F12	Esc [v
F37	Ctrl+Shift+F1	Esc [w
F38	Ctrl+Shift+F2	Esc [x
F39	Ctrl+Shift+F3	Esc [y
F40	Ctrl+Shift+F4	Esc [z
F41	Ctrl+Shift+F5	Esc [@
F42	Ctrl+Shift+F6	Esc [[
F43	Ctrl+Shift+F7	Esc [\
F44	Ctrl+Shift+F8	Esc []
F45	Ctrl+Shift+F9	Esc [^
F46	Ctrl+Shift+F10	Esc [_
F47	Ctrl+Shift+F11	Esc [`
F48	Ctrl+Shift+F12	Esc [{
F49	<Home>	Esc [H
F50	<Up>	Esc [A
F51	<PgUp>	Esc [I
F52	<->	2Dh
F53	<Left>	Esc [D
F54	<5>	Esc [G
F55	<Right>	Esc [C
F56	<+>	2Bh
F57	<End>	Esc [F
F58	<Down>	Esc [B
F59	<PgDn>	Esc [G
F60	<Ins>	Esc [L
F61	<Del>	7Fh

NON PROGRAMMING FUNCTION KEYS:

For all the ANSI emulations, an additional 12 function keys are available. It is not possible to modify the values of these keys:

Keystroke	Value
Alt+F1	Esc [<a
Alt+F2	Esc [<b
Alt+F3	Esc [<c
Alt+F4	Esc [<d
Alt+F5	Esc [<e
Alt+F6	Esc [<f
Alt+F7	Esc [<g
Alt+F8	Esc [<h
Alt+F9	Esc [<i
Alt+F10	Esc [<j
Alt+F11	Esc [<k
Alt+F12	Esc [<l

A.3.3 - PCTERM EMULATIONS

PCTERM, PCTERM THEOS, OS/2 POLYMOD2:

N°	Keystroke	Value	N°	Keystroke	Value
F1	F1	01h 40h 0Dh	F31	Ctrl+F7	---
F2	F2	01h 41h 0Dh	F32	Ctrl+F8	---
F3	F3	01h 42h 0Dh	F33	Ctrl+F9	---
F4	F4	01h 43h 0Dh	F34	Ctrl+F10	---
F5	F5	01h 44h 0Dh	F35	Ctrl+F11	---
F6	F6	01h 45h 0Dh	F36	Ctrl+F12	---
F7	F7	01h 46h 0Dh	F37	Alt+F1	---
F8	F8	01h 47h 0Dh	F38	Alt+F2	---
F9	F9	01h 48h 0Dh	F39	Alt+F3	---
F10	F10	01h 49h 0Dh	F40	Alt+F4	---
F11	F11	01h 4Ah 0Dh	F41	Alt+F5	---
F12	F12	01h 4Bh 0Dh	F42	Alt+F6	---
F13	Shift+F1	01h 60h 0Dh	F43	Alt+F7	---
F14	Shift+F2	01h 61h 0Dh	F44	Alt+F8	---
F15	Shift+F3	01h 62h 0Dh	F45	Alt+F9	---
F16	Shift+F4	01h 63h 0Dh	F46	Alt+F10	---
F17	Shift+F5	01h 64h 0Dh	F47	Alt+F11	---
F18	Shift+F6	01h 65h 0Dh	F48	Alt+F12	---
F19	Shift+F7	01h 66h 0Dh	F49	<Home>	1Eh
F20	Shift+F8	01h 67h 0Dh	F50	<Up>	0Bh
F21	Shift+F9	01h 68h 0Dh	F51	<PgUp>	Esc J
F22	Shift+F10	01h 69h 0Dh	F52	<->	2Dh
F23	Shift+F11	01h 6Ah 0Dh	F53	<Left>	08h
F24	Shift+F12	01h 6Bh 0Dh	F54	<5>	---
F25	Ctrl+F1	---	F55	<Right>	0Ch
F26	Ctrl+F2	---	F56	<+>	2Bh
F27	Ctrl+F3	---	F57	<End>	Esc T
F28	Ctrl+F4	---	F58	<Down>	0Ah
F29	Ctrl+F5	---	F59	<PgDn>	Esc K
F30	Ctrl+F6	---	F60	<Ins>	Esc q
			F61	<Del>	7Fh

A.3.4 - VT220 EMULATION

Function keys

N°	Keystroke	Value
F1	F1	Esc OP
F2	F2	Esc OQ
F3	F3	Esc OR
F4	F4	Esc OS
F5	F5	Esc [16~
F6	F6	Esc [17~
F7	F7	Esc [18~
F8	F8	Esc [19~
F9	F9	Esc [20~
F10	F10	Esc [21~
F11	F11	Esc [23~
F12	F12	Esc [24~
F13	Alt+F1	Esc OP
F14	Alt+F2	Esc OQ
F15	Alt+F3	Esc OR
F16	Alt+F4	Esc OS
F17	Alt+F5	Esc [25~
F18	Alt+F6	Esc [26~
F19	Alt+F7	Esc [28~
F20	Alt+F8	Esc [29~
F21	Alt+F9	Esc [31~
F22	Alt+F10	Esc [32~
F23	Alt+F11	Esc [33~
F24	Alt+F12	Esc [34~

N°	Keystroke	Value
F25	Shift+F1	---
F26	Shift+F2	---
F27	Shift+F3	---
F28	Shift+F4	---
F29	Shift+F5	---
F30	Shift+F6	---
F31	Shift+F7	---
F32	Shift+F8	---
F33	Shift+F9	---
F34	Shift+F10	---
F35	Shift+F11	---
F36	Shift+F12	---
F37	Alt+Shift+F1	---
F38	Alt+Shift+F2	---
F39	Alt+Shift+F3	---
F40	Alt+Shift+F4	---
F41	Alt+Shift+F5	---
F42	Alt+Shift+F6	---
F43	Alt+Shift+F7	---
F44	Alt+Shift+F8	---
F45	Alt+Shift+F9	---
F46	Alt+Shift+F10	---
F47	Alt+Shift+F11	---
F48	Alt+Shift+F12	---

The keypad modes (numeric or application) and the cursor keypad modes (cursor or application) are selected through escape sequences.

Numeric keypad:

Key	Keypad Mode		Application Mode
	Locked	Unlocked	
<*>	*	*	Esc Ol
<->	–	–	Esc Om
<.>	.	.	Esc On
<0>	0	Esc q	Esc Op
<1>	1	Esc [5~	Esc Oq
<2>	2	Esc [B	Esc Or
<3>	3	Esc [U	Esc Os
<4>	4	Esc [D	Esc Ot
<5>	5	5	Esc Ou
<6>	6	Esc [C	Esc Ov
<7>	7	Esc [2~	Esc Ow
<8>	8	Esc [A	Esc Ox
<9>	9	Esc [V	Esc Oy
<Return>	CR or CR+LF	CR or CR+LF	Esc OM
<+>	+	+	+
</>	/	/	/

Cursor keypad:

Key	Cursor Mode	Application Mode
<Up>	Esc [A	Esc OA
<Down>	Esc [B	Esc OB
<Right>	Esc [C	Esc OC
<Left>	Esc [D	Esc OD

Editing keypad:

Key	Value
<Ins>	Esc [1~
<Home>	Esc [2~
<PgUp>	Esc [3~
<Del>	Esc [4~
<End>	Esc [5~
<PgDn>	Esc [6~

12 additional function keys are available. It is not possible to modify the values of these keys:

Keystroke	Value
Ctrl+F1	Esc [<a
Ctrl+F2	Esc [<b
Ctrl+F3	Esc [<c
Ctrl+F4	Esc [<d
Ctrl+F5	Esc [<e
Ctrl+F6	Esc [<f
Ctrl+F7	Esc [<g
Ctrl+F8	Esc [<h
Ctrl+F9	Esc [<i
Ctrl+F10	Esc [<j
Ctrl+F11	Esc [<k
Ctrl+F12	Esc [<l

A.3.5 - SM94xx EMULATIONS

SM9400 :

N°	Key	Value
F1	F1	96h
F2	F2	90h
F3	F3	12h
F4	F4	93h
F5	F5	9Ch
F6	F6	1Bh
F7	F7	0Ch
F8	F8	95h
F9	F9	1Fh
F10	F10	17h
F11	F11	8Eh
F12	F12	91h
F13	Shift+F1	---
F14	Shift+F2	---
F15	Shift+F3	---
F16	Shift+F4	---
F17	Shift+F5	---
F18	Shift+F6	---
F19	Shift+F7	---
F20	Shift+F8	---
F21	Shift+F9	---
F22	Shift+F10	---
F23	Shift+F11	---
F24	Shift+F12	---
F25	Ctrl+F1	---
F26	Ctrl+F2	---
F27	Ctrl+F3	---
F28	Ctrl+F4	---
F29	Ctrl+F5	---
F30	Ctrl+F6	---
F31	Ctrl+F7	---
F32	Ctrl+F8	---
F33	Ctrl+F9	---
F34	Ctrl+F10	---

N°	Key	Value
F35	Ctrl+F11	---
F36	Ctrl+F12	---
F37	Ctrl+Shift+F1	---
F38	Ctrl+Shift+F2	---
F39	Ctrl+Shift+F3	---
F40	Ctrl+Shift+F4	---
F41	Ctrl+Shift+F5	---
F42	Ctrl+Shift+F6	---
F43	Ctrl+Shift+F7	---
F44	Ctrl+Shift+F8	---
F45	Ctrl+Shift+F9	---
F46	Ctrl+Shift+F10	---
F47	Ctrl+Shift+F11	---
F48	Ctrl+Shift+F12	---
F49	<Home>	9Dh
F50	<Up>	1Ah
F51	<PgUp>	89h
F52	<->	2Dh
F53	<Left>	19h
F54	<5>	35h
F55	<Right>	18h
F56	<+>	2Bh
F57	<End>	0Eh
F58	<Down>	0Bh
F59	<PgDn>	8Ah
F60	<Insert>	8Fh
F61	<Del>	8Dh
F62	<Esc>	1Bh

<Tab>	09h
<Shift><Tab>	14h
<backspace>	08h
<Shift><backspace>	7Fh

SM9412 :

N°	Key	Value
F1	F1	94h
F2	F2	85h
F3	F3	86h
F4	F4	81h
F5	F5	82h
F6	F6	83h
F7	F7	84h
F8	F8	87h
F9	F9	8Eh
F10	F10	91h
F11	F11	92h
F12	F12	0Ah
F13	Shift+F1	96h
F14	Shift+F2	90h
F15	Shift+F3	12h
F16	Shift+F4	93h
F17	Shift+F5	9Ch
F18	Shift+F6	1Bh
F19	Shift+F7	0Ch
F20	Shift+F8	95h
F21	Shift+F9	1Fh
F22	Shift+F10	17h
F23	Shift+F11	8Eh
F24	Shift+F12	91h
F25	Ctrl+F1	E8h
F26	Ctrl+F2	---
F27	Ctrl+F3	---
F28	Ctrl+F4	---
F29	Ctrl+F5	---
F30	Ctrl+F6	---
F31	Ctrl+F7	---
F32	Ctrl+F8	EDh
F33	Ctrl+F9	---
F34	Ctrl+F10	---
F35	Ctrl+F11	9Dh
F36	Ctrl+F12	0Ah

N°	Key	Value
F37	Ctrl+Shift+F1	---
F38	Ctrl+Shift+F2	---
F39	Ctrl+Shift+F3	---
F40	Ctrl+Shift+F4	---
F41	Ctrl+Shift+F5	---
F42	Ctrl+Shift+F6	---
F43	Ctrl+Shift+F7	---
F44	Ctrl+Shift+F8	---
F45	Ctrl+Shift+F9	---
F46	Ctrl+Shift+F10	---
F47	Ctrl+Shift+F11	---
F48	Ctrl+Shift+F12	---
F49	<Home>	9Dh
F50	<Up>	1Ah
F51	<PgUp>	89h
F52	<->	2Dh
F53	<Left>	19h
F54	<5>	35h
F55	<Right>	18h
F56	<+>	2Bh
F57	<End>	0Eh
F58	<Down>	0Bh
F59	<PgDn>	8Ah
F60	<Insert>	8Fh
F61	<Del>	8Dh
F62	<Esc>	0Eh

<Shift><Esc>	1Bh
<Ctrl><Esc>	EBh
<Tab>	09h
<Shift><Tab>	14h
<Ctrl><Tab>	99h
<backspace>	08h
<Shift><backspace>	7Fh

Description of the numeric keypad, the editing keypad and the cursor keypad for SM94xx emulations:

Numeric keypad:

key	keypad Locked	keypad Unlocked	
		key alone	key + Shift
<7>	37h	37h	85h 1Ah 81h
<8>	38h	38h	1Ah
<9>	39h	39h	85h 19h 81h
<4>	34h	34h	19h
<5>	35h	35h	35h
<6>	36h	36h	18h
<1>	31h	31h	85h 0Bh 81h
<2>	32h	32h	0B
<3>	33h	33h	85h 18h 81h
<0>	30h	30h	8Fh
<.>	2Eh	2Eh	8Dh

Cursor keypad :

	key	key + shift
<up>	1Ah	89h
<down>	0Bh	8Ah
<right>	19h	8Bh
<left>	18h	8Ch

Editing keypad :

key	Value
<Inser>	8Fh
<Home>	83h 19h 81h
<PgUp>	85h 19h 81h
<Del>	8Dh
<End>	83h 18h 81h
<PgDn>	85h 18h 81h

A.4 - COMPOSITE CHARACTERS

To get a composite character two keystrokes are needed. The first one is the introducer (^, ~, ¨...), the second one is the character itself (a, e, i, n...).

Example: press '^' then 'e' to get 'ê'.

Note: on the AX3000, composite characters are accentuate characters.

When the keyboard mode is <u>scancode</u>, composite characters are handled by the operating system.

When the keyboard mode is <u>ASCII</u>, composite characters can be handled either by the AX3000 or by the operating system. Select the method by the `Compose accentuate characters` set-up parameter (<F2> in the terminal set-up).

Three values are available for this set-up parameter:
- `no`: standard processing, to get accentuate characters, the operating system must mapped the two keystrokes to a single value,
- `local`: composite characters are locally processed by the AX3000,
- `remote`: special ASCII code are associated with introducers (only available with ANSI emulations).

These three processings are described in the following.

Note: next chapters don't deal with the National ISO 7-bit character set. The composite character are not supported by the character set.

A.4.1 - Standard Processing

When this method is used (`Compose accentuate characters: no`), the AX3000 doesn't make any special processing on the composite character introducer. The following table lists the ASCII sends to the operating systems according to the used character set:

	character sets					
	PC-437	PC-850	PC-860	8859	VT220	SM9400
Acute accent (')	27h	EFh	27h	B4h	27h	27h
Grave accent (`)	60h	60h	60h	60h	60h	60h
Circumflex accent (^)	5Eh	5Eh	5Eh	5Eh	5Eh	5Eh
Dieresis (¨)	22h	F9h	22h	A8h	22h	CEh
Tilde (~)	7Eh	7Eh	7Eh	7Eh	7Eh	7Eh
Paragraph (§)	15h	F5h	15h	A7h	A7h	C9h
Cube (³)	---	FCh	---	B3h	B3h	---
Cedilla (,)	2Ch	F7h	2Ch	F7h	2Ch	2Ch

Note: some symbols are not included in all characters sets. Then the AX3000 uses a ASCII code to get a symbol like the wanted symbol (for example, with the character set 437, quote are used for dieresis).

A.4.2 - Local Processing

When a composite character introducer is pressed (see table A.1) no character is sent to the operating system. The AX3000 waits for a second key is pressed.

If the 2 keystrokes represent a valid symbol for the used character set (see table A.2), the ASCII code of this symbol is sent to the operating system.

If the symbol is not valid, a beep is sounded and the introducer is cancelled.

Notes : - when the spacebar is pressed after the introducer, or when the introducer is pressed twice, the ASCII code sent to the operating system is the introducer itself (example: ^ + ^ = ^).
- Some national keyboards (American, Italian and U.K) don't support this feature.

	FR	GE	SP	BE	SW	PO	DU
Acute accent (')		✓	✓	✓	✓	✓	✓
Grave accent (`)		✓	✓	✓	✓	✓	✓
Circumflex accent (^)	✓		✓	✓	✓	✓	✓
Dieresis (¨)	✓		✓	✓	✓	✓	✓
Tilde (~)				✓	✓	✓	✓
Cedilla (,)							✓

Tableau A.1 : valid introducers according to the national keyboard

	Character Sets					
	PC-437	PC-850	PC-860	8859	VT220	SM9400
Acute accent (')	áéíóú É	áéíóú ÁÉÍÓÚ	áéíóú ÁÉÍÓÚ	áéíóú ÁÉÍÓÚ	áéíóú ÁÉÍÓÚ	áéíóú ÁÉÍÓÚ
Grave accent (`)	àèìòù ÀÈÌÒÙ	àèìòù ÀÈÌÒÙ	àèìòù ÀÈÌÒÙ	àèìòù ÀÈÌÒÙ	àèìòù ÀÈÌÒÙ	àèìòù ÀÈÌÒÙ
Circumflex accent (^)	âêîôû ÂÊÎÔÛ	âêîôû ÂÊÎÔÛ	âêô ÂÊÔ	âêîôû ÂÊÎÔÛ	âêîôû ÂÊÎÔÛ	âêîôû ÂÊÎÔÛ
Dieresis (¨)	äëïöü ÄÖÜ	äëïöü ÄËÏÖÜ	ü Ü	äëïöü ÄËÏÖÜ	äëïöü ÄËÏÖÜ	äëïöü ÄËÏÖÜ
Tilde (~)	ñ Ñ	ãõñ ÃÕÑ	ãõñ ÃÕÑ	ãõñ ÃÕÑ	ãõñ ÃÕÑ	ãõñ ÃÕÑ
Cedilla (,)	ç Ç	ç Ç	ç Ç	ç Ç	ç Ç	ç Ç

Tableau A.2 : valid symbols according to the introducer and the character set

A.4.3 - Remote Processing

For this method (only available in ANSI emulation), the operating system needs special ASCII codes for composite character introducers.

Note: as the paragraph (§) and the cube (³) symbols are not included is some character sets, these two symbols use also a special ASCII code.

Tables in the next page list special ASCII codes according to the national keyboard and the character set.

	Character Set			
France	PC-437	PC-850	PC-860	8859
Circumflex accent (^)	B0h	B0h	B0h	90h
Dieresis (¨)	B1h	B1h	B1h	91h
Paragraph (§)	B2h	F5h	B2h	A7h
Cube (³)	C0h	FCh	C0h	B3h

	Character Set			
Germany	PC-437	PC-850	PC-860	8859
Acute accent (')	B3h	B3h	B3h	92h
Grave accent (`)	B4h	B4h	B4h	93h
Paragraph (§)	B2h	F5h	B2h	A7h
Cube (³)	C0h	FCh	C0h	B3h

	Character Set			
Italy	PC-437	PC-850	PC-860	8859
Paragraph (§)	B2h	F5h	B2h	A7h
Cube (³)	C0h	FCh	C0h	B3h

	Character Set			
Spain	PC-437	PC-850	PC-860	8859
Acute accent (')	B3h	B3h	B3h	92h
Grave accent (`)	B4h	B4h	B4h	93h
Circumflex accent (^)	B0h	B0h	B0h	90h
Dieresis (¨)	B1h	B1h	B1h	91h
Paragraph (§)	B2h	F5h	B2h	A7h
Cube (³)	C0h	FCh	C0h	B3h

Portugal / Switzerland	Character Set			
Belgium / Netherlands	PC-437	PC-850	PC-860	8859
Acute accent (')	B3h	B3h	B3h	92h
Grave accent (`)	B4h	B4h	B4h	93h
Circumflex accent (^)	B0h	B0h	B0h	90h
Dieresis (¨)	B1h	B1h	B1h	91h
Tilde (~)	7Eh	B2h	7Eh	7Eh
Paragraph (§)	B2h	F5h	B2h	A7h
Cube (³)	C0h	FCh	C0h	B3h