# Supported Terminal Sequences

xterm.js version: 4.14.1

## Table of Contents

## General notes

This document lists xterm.js' support of terminal sequences. The sequences are grouped by their sequence type:

- C0: single byte command (7bit control codes, byte range `\x00 .. \x1F`, `\x7F`)
- C1: single byte command (8bit control codes, byte range `\x80 .. \x9F`)
- ESC: sequence starting with `ESC` (`\x1B`)
- CSI - Control Sequence Introducer: sequence starting with `ESC [` (7bit) or CSI (`\x9B`, 8bit)
- DCS - Device Control String: sequence starting with `ESC P` (7bit) or DCS (`\x90`, 8bit)
- OSC - Operating System Command: sequence starting with `ESC ]` (7bit) or OSC (`\x9D`, 8bit)

Application Program Command (APC), Privacy Message (PM) and Start of String (SOS) are recognized but not supported, any sequence of these types will be ignored. They are also not hookable by the API.

Note that the list only contains sequences implemented in xterm.js' core codebase. Missing sequences are either not supported or unstable/experimental. Furthermore addons or integrations can provide additional custom sequences.

To denote the sequences the tables use the same abbreviations as xterm does:

- `Ps`: A single (usually optional) numeric parameter, composed of one or more decimal digits.
- `Pm`: A multiple numeric parameter composed of any number of single numeric parameters, separated by ; character(s), e.g. `` ` Ps ; Ps ; … ` ``.
- `Pt`: A text parameter composed of printable characters. Note that for most commands with `Pt` only ASCII printables are specified to work. Additionally the parser will let pass any codepoint greater than C1 as printable.

## C0

| Mnemonic | Name | Sequence | Short Description | Support |
|---|---|---|---|---|
| NUL | Null | `\0, \x00` | NUL is ignored. | ✓ |
| BEL | Bell | `\a, \x07` | Ring the bell. *less* | ✓ |

*The behavior of the bell is further customizable with `ITerminalOptions.bellStyle` and `ITerminalOptions.bellSound`.*

| | | | | |
|---|---|---|---|---|
| BS | Backspace | `\b, \x08` | Move the cursor one position to the left. *less* | ✓ |

*By default it is not possible to move the cursor past the leftmost position. If `reverse wrap-around ( CSI ? 45 h )` is set, a previous soft line wrap (DECAWM) can be undone with BS within the scroll margins. In that case the cursor will wrap back to the end of the previous row. Note that it is not possible to peek back into the scrollbuffer with the cursor, thus at the home position (top-leftmost cell) this has no effect.*

| | | | | |
|---|---|---|---|---|
| HT | Horizontal Tabulation | `\t, \x09` | Move the cursor to the next character tab stop. | ✓ |
| LF | Line Feed | `\n, \x0A` | Move the cursor one row down, scrolling if needed. *less* | ✓ |

*Scrolling is restricted to scroll margins and will only happen on the bottom line.*

| | | | | |
|---|---|---|---|---|
| VT | Vertical Tabulation | `\v, \x0B` | Treated as LF. | ✓ |
| FF | Form Feed | `\f, \x0C` | Treated as LF. | ✓ |
| CR | Carriage Return | `\r, \x0D` | Move the cursor to the beginning of the row. | ✓ |
| SO | Shift Out | `\x0E` | Switch to an alternative character set. | Partial |
| SI | Shift In | `\x0F` | Return to regular character set after Shift Out. | ✓ |
| ESC | Escape | `\e, \x1B` | Start of a sequence. Cancels any other sequence. | ✓ |

## C1

| Mnemonic | Name | Sequence | Short Description | Support |
|---|---|---|---|---|
| IND | Index | `\x84` | Move the cursor one line down scrolling if needed. | ✓ |
| NEL | Next Line | `\x85` | Move the cursor to the beginning of the next row. | ✓ |
| HTS | Horizontal Tabulation Set | `\x88` | Places a tab stop at the current cursor position. | ✓ |
| DCS | Device Control String | `\x90` | Start of a DCS sequence. | ✓ |
| CSI | Control Sequence Introducer | `\x9B` | Start of a CSI sequence. | ✓ |
| ST | String Terminator | `\x9C` | Terminator used for string type sequences. | ✓ |
| OSC | Operating System Command | `\x9D` | Start of an OSC sequence. | ✓ |
| PM | Privacy Message | `\x9E` | Start of a privacy message. | ✓ |
| APC | Application Program Command | `\x9F` | Start of an APC sequence. | ✓ |

## CSI

| Mnemonic | Name | Sequence | Short Description | Support |
|---|---|---|---|---|
| ICH | Insert Characters | `CSI Ps @` | Insert `Ps` (blank) characters (default = 1). *less* | ✓ |

*The ICH sequence inserts `Ps` blank characters. The cursor remains at the beginning of the blank characters. Text between the cursor and right margin moves to the right. Characters moved past the right margin are lost.*

| | | | | |
|---|---|---|---|---|
| SL | Scroll Left | `CSI Ps SP @` | Scroll viewport `Ps` times to the left. *less* | ✓ |

*SL moves the content of all lines within the scroll margins `Ps` times to the left. SL has no effect outside of the scroll margins.*

| | | | | |
|---|---|---|---|---|
| CUU | Cursor Up | `CSI Ps A` | Move cursor `Ps` times up (default=1). *less* | ✓ |

*If the cursor would pass the top scroll margin, it will stop there.*

| | | | | |
|---|---|---|---|---|
| SR | Scroll Right | `CSI Ps SP A` | Scroll viewport `Ps` times to the right. *less* | ✓ |

*SL moves the content of all lines within the scroll margins `Ps` times to the right. Content at the right margin is lost. SL has no effect outside of the scroll margins.*

| CUD | Cursor Down | `CSI Ps B` | Move cursor `Ps` times down (default=1). *less* | ✓ |

*If the cursor would pass the bottom scroll margin, it will stop there.*

| CUF | Cursor Forward | `CSI Ps C` | Move cursor `Ps` times forward (default=1). | ✓ |
| CUB | Cursor Backward | `CSI Ps D` | Move cursor `Ps` times backward (default=1). | ✓ |
| CNL | Cursor Next Line | `CSI Ps E` | Move cursor `Ps` times down (default=1) and to the first column. *less* | ✓ |

*Same as CUD, additionally places the cursor at the first column.*

| CPL | Cursor Backward | `CSI Ps F` | Move cursor `Ps` times up (default=1) and to the first column. *less* | ✓ |

*Same as CUU, additionally places the cursor at the first column.*

| CHA | Cursor Horizontal Absolute | `CSI Ps G` | Move cursor to `Ps`-th column of the active row (default=1). | ✓ |
| CUP | Cursor Position | `CSI Ps ; Ps H` | Set cursor to position [ `Ps` , `Ps` ] (default = [1, 1]). *less* | ✓ |

*If ORIGIN mode is set, places the cursor to the absolute position within the scroll margins. If ORIGIN mode is not set, places the cursor to the absolute position within the viewport. Note that the coordinates are 1-based, thus the top left position starts at `1 ; 1`.*

| CHT | Cursor Horizontal Tabulation | `CSI Ps I` | Move cursor `Ps` times tabs forward (default=1). | ✓ |
| ED | Erase In Display | `CSI Ps J` | Erase various parts of the viewport. *less* | ✓ |

*Supported param values:*

| **Ps** | **Effect** |
| --- | --- |
| 0 | *Erase from the cursor through the end of the viewport.* |
| 1 | *Erase from the beginning of the viewport through the cursor.* |
| 2 | *Erase complete viewport.* |
| 3 | *Erase scrollback.* |

| DECSED | Selective Erase In Display | `CSI ? Ps J` | Currently the same as ED. | <u>Partial</u> |
| EL | Erase In Line | `CSI Ps K` | Erase various parts of the active row. *less* | ✓ |

*Supported param values:*

| **Ps** | **Effect** |
| --- | --- |
| 0 | *Erase from the cursor through the end of the row.* |
| 1 | *Erase from the beginning of the line through the cursor.* |
| 2 | *Erase complete line.* |

| DECSEL | Selective Erase In Line | `CSI ? Ps K` | Currently the same as EL. | <u>Partial</u> |
| IL | Insert Line | `CSI Ps L` | Insert `Ps` blank lines at active row (default=1). *less* | ✓ |

*For every inserted line at the scroll top one line at the scroll bottom gets removed. The cursor is set to the first column. IL has no effect if the cursor is outside the scroll margins.*

| DL | Delete Line | `CSI Ps M` | Delete `Ps` lines at active row (default=1). *less* | ✓ |

*For every deleted line at the scroll top one blank line at the scroll bottom gets appended. The cursor is set to the first column. DL has no effect if the cursor is outside the scroll margins.*

| DCH | Delete Character | `CSI Ps P` | Delete `Ps` characters (default=1). *less* | ✓ |

*As characters are deleted, the remaining characters between the cursor and right margin move to the left. Character attributes move with the characters. The terminal adds blank characters at the right margin.*

| SU | Scroll Up | `CSI Ps S` | Scroll `Ps` lines up (default=1). | ✓ |
| SD | Scroll Down | `CSI Ps T` | Scroll `Ps` lines down (default=1). | ✓ |
| ECH | Erase Character | `CSI Ps X` | Erase `Ps` characters from current cursor position to the right (default=1). *less* | ✓ |

*ED erases `Ps` characters from current cursor position to the right. ED works inside or outside the scrolling margins.*

| CBT | Cursor Backward Tabulation | `CSI Ps Z` | Move cursor `Ps` tabs backward (default=1). | ✓ |
| HPA | Horizontal Position Absolute | `CSI Ps ` ` | Same as CHA. | ✓ |
| HPR | Horizontal Position Relative | `CSI Ps a` | Same as CUF. | ✓ |
| REP | Repeat Preceding Character | `CSI Ps b` | Repeat preceding character `Ps` times (default=1). *less* | ✓ |

*REP repeats the previous character `Ps` times advancing the cursor, also wrapping if DECAWM is set. REP has no effect if the sequence does not follow a printable ASCII character (NOOP for any other sequence in between or NON ASCII characters).*

| DA1 | Primary Device Attributes | `CSI c` | Send primary device attributes. | ✓ |
| DA2 | Secondary Device Attributes | `CSI > c` | Send primary device attributes. | ✓ |
| VPA | Vertical Position Absolute | `CSI Ps d` | Move cursor to `Ps`-th row (default=1). | ✓ |
| VPR | Vertical Position Relative | `CSI Ps e` | Move cursor `Ps` times down (default=1). | ✓ |
| HVP | Horizontal and Vertical Position | `CSI Ps ; Ps f` | Same as CUP. | ✓ |
| TBC | Tab Clear | `CSI Ps g` | Clear tab stops at current position (0) or all (3) (default=0). *less* | ✓ |

*Clearing tabstops off the active row (Ps = 2, VT100) is currently not supported.*

| SM | Set Mode | `CSI Pm h` | Set various terminal modes. *less* | Partial |

*Supported param values by SM:*

| *Param* | *Action* | *Support* |
|---------|----------|-----------|
| 2 | *Keyboard Action Mode (KAM). Always on.* | ✗ |
| 4 | *Insert Mode (IRM).* | ✓ |
| 12 | *Send/receive (SRM). Always off.* | ✗ |
| 20 | *Automatic Newline (LNM). Always off.* | ✗ |

| DECSET | DEC Private Set Mode | `CSI ? Pm h` | Set various terminal attributes. *less* | Partial |

*Supported param values by DECSET:*

| *param* | *Action* | *Support* |
|---------|----------|-----------|

| | | |
|---|---|---|
| 1 | *Application Cursor Keys (DECCKM).* | ✓ |
| 2 | *Designate US-ASCII for character sets G0-G3 (DECANM).* | ✓ |
| 3 | *132 Column Mode (DECCOLM).* | ✓ |
| 6 | *Origin Mode (DECOM).* | ✓ |
| 7 | *Auto-wrap Mode (DECAWM).* | ✓ |
| 8 | *Auto-repeat Keys (DECARM). Always on.* | ✗ |
| 9 | *X10 xterm mouse protocol.* | ✓ |
| 12 | *Start Blinking Cursor.* | ✓ |
| 25 | *Show Cursor (DECTCEM).* | ✓ |
| 45 | *Reverse wrap-around.* | ✓ |
| 47 | *Use Alternate Screen Buffer.* | ✓ |
| 66 | *Application keypad (DECNKM).* | ✓ |
| 1000 | *X11 xterm mouse protocol.* | ✓ |
| 1002 | *Use Cell Motion Mouse Tracking.* | ✓ |
| 1003 | *Use All Motion Mouse Tracking.* | ✓ |
| 1004 | *Send FocusIn/FocusOut events* | ✓ |
| 1005 | *Enable UTF-8 Mouse Mode.* | ✗ |
| 1006 | *Enable SGR Mouse Mode.* | ✓ |
| 1015 | *Enable urxvt Mouse Mode.* | ✗ |
| 1047 | *Use Alternate Screen Buffer.* | ✓ |
| 1048 | *Save cursor as in DECSC.* | ✓ |
| 1049 | *Save cursor and switch to alternate buffer clearing it.* | *Partial* |
| 2004 | *Set bracketed paste mode.* | ✓ |

| | | | | |
|---|---|---|---|---|
| RM | Reset Mode | `CSI Pm l` | Set various terminal attributes. *less* | *Partial* |

*Supported param values by RM:*

| **Param** | **Action** | **Support** |
|---|---|---|
| 2 | *Keyboard Action Mode (KAM). Always on.* | ✗ |
| 4 | *Replace Mode (IRM). (default)* | ✓ |
| 12 | *Send/receive (SRM). Always off.* | ✗ |
| 20 | *Normal Linefeed (LNM). Always off.* | ✗ |

| | | | | |
|---|---|---|---|---|
| DECRST | DEC Private Reset Mode | `CSI ? Pm l` | Reset various terminal attributes. *less* | *Partial* |

*Supported param values by DECRST:*

| **param** | **Action** | **Support** |
|---|---|---|
| 1 | *Normal Cursor Keys (DECCKM).* | ✓ |
| 2 | *Designate VT52 mode (DECANM).* | ✗ |
| 3 | *80 Column Mode (DECCOLM).* | *Broken* |
| 6 | *Normal Cursor Mode (DECOM).* | ✓ |
| 7 | *No Wraparound Mode (DECAWM).* | ✓ |
| 8 | *No Auto-repeat Keys (DECARM).* | ✗ |

| | | |
|---|---|---|
| *9* | *Don't send Mouse X & Y on button press.* | ✓ |
| *12* | *Stop Blinking Cursor.* | ✓ |
| *25* | *Hide Cursor (DECTCEM).* | ✓ |
| *45* | *No reverse wrap-around.* | ✓ |
| *47* | *Use Normal Screen Buffer.* | ✓ |
| *66* | *Numeric keypad (DECNKM).* | ✓ |
| *1000* | *Don't send Mouse reports.* | ✓ |
| *1002* | *Don't use Cell Motion Mouse Tracking.* | ✓ |
| *1003* | *Don't use All Motion Mouse Tracking.* | ✓ |
| *1004* | *Don't send FocusIn/FocusOut events.* | ✓ |
| *1005* | *Disable UTF-8 Mouse Mode.* | ✗ |
| *1006* | *Disable SGR Mouse Mode.* | ✓ |
| *1015* | *Disable urxvt Mouse Mode.* | ✗ |
| *1047* | *Use Normal Screen Buffer (clearing screen if in alt).* | ✓ |
| *1048* | *Restore cursor as in DECRC.* | ✓ |
| *1049* | *Use Normal Screen Buffer and restore cursor.* | ✓ |
| *2004* | *Reset bracketed paste mode.* | ✓ |

| | | | | |
|---|---|---|---|---|
| SGR | Select Graphic Rendition | `CSI Pm m` | Set/Reset various text attributes. *less* | <u>Partial</u> |

*SGR selects one or more character attributes at the same time. Multiple params (up to 32) are applied in order from left to right. The changed attributes are applied to all new characters received. If you move characters in the viewport by scrolling or any other means, then the attributes move with the characters.*

*Supported param values by SGR:*

| *Param* | *Meaning* | *Support* |
|---|---|---|
| *0* | *Normal (default). Resets any other preceding SGR.* | ✓ |
| *1* | *Bold. (also see* `options.drawBoldTextInBrightColors` *)* | ✓ |
| *2* | *Faint, decreased intensity.* | ✓ |
| *3* | *Italic.* | ✓ |
| *4* | *Underlined (see below for style support).* | ✓ |
| *5* | *Slowly blinking.* | ✗ |
| *6* | *Rapidly blinking.* | ✗ |
| *7* | *Inverse. Flips foreground and background color.* | ✓ |
| *8* | *Invisible (hidden).* | ✓ |
| *9* | *Crossed-out characters (strikethrough).* | ✓ |
| *21* | *Doubly underlined.* | <u>*Partial*</u> |
| *22* | *Normal (neither bold nor faint).* | ✓ |
| *23* | *No italic.* | ✓ |
| *24* | *Not underlined.* | ✓ |
| *25* | *Steady (not blinking).* | ✓ |
| *27* | *Positive (not inverse).* | ✓ |
| *28* | *Visible (not hidden).* | ✓ |
| *29* | *Not Crossed-out (strikethrough).* | ✓ |

| 30 | *Foreground color: Black.* | ✓ |
| 31 | *Foreground color: Red.* | ✓ |
| 32 | *Foreground color: Green.* | ✓ |
| 33 | *Foreground color: Yellow.* | ✓ |
| 34 | *Foreground color: Blue.* | ✓ |
| 35 | *Foreground color: Magenta.* | ✓ |
| 36 | *Foreground color: Cyan.* | ✓ |
| 37 | *Foreground color: White.* | ✓ |
| 38 | *Foreground color: Extended color.* | *Partial* |
| 39 | *Foreground color: Default (original).* | ✓ |
| 40 | *Background color: Black.* | ✓ |
| 41 | *Background color: Red.* | ✓ |
| 42 | *Background color: Green.* | ✓ |
| 43 | *Background color: Yellow.* | ✓ |
| 44 | *Background color: Blue.* | ✓ |
| 45 | *Background color: Magenta.* | ✓ |
| 46 | *Background color: Cyan.* | ✓ |
| 47 | *Background color: White.* | ✓ |
| 48 | *Background color: Extended color.* | *Partial* |
| 49 | *Background color: Default (original).* | ✓ |
| 90 - 97 | *Bright foreground color (analogous to 30 - 37).* | ✓ |
| 100 - 107 | *Bright background color (analogous to 40 - 47).* | ✓ |

*Underline supports subparams to denote the style in the form* `4 : x` :

| x | Meaning | Support |
|---|---------|---------|
| 0 | *No underline. Same as* `SGR 24 m` . | ✓ |
| 1 | *Single underline. Same as* `SGR 4 m` . | ✓ |
| 2 | *Double underline.* | *Partial* |
| 3 | *Curly underline.* | *Partial* |
| 4 | *Dotted underline.* | *Partial* |
| 5 | *Dashed underline.* | *Partial* |
| other | *Single underline. Same as* `SGR 4 m` . | ✓ |

*Extended colors are supported for foreground (Ps=38) and background (Ps=48) as follows:*

| Ps + 1 | Meaning | Support |
|--------|---------|---------|
| 0 | *Implementation defined.* | ✗ |
| 1 | *Transparent.* | ✗ |
| 2 | *RGB color as* `Ps ; 2 ; R ; G ; B` *or* `Ps : 2 : : R : G : B .` | ✓ |
| 3 | *CMY color.* | ✗ |
| 4 | *CMYK color.* | ✗ |
| 5 | *Indexed (256 colors) as* `Ps ; 5 ; INDEX` *or* `Ps : 5 : INDEX .` | ✓ |

| DSR | Device Status Report | `CSI Ps n` | Request cursor position (CPR) with `Ps` = 6. | ✓ |
| DECDSR | DEC Device Status Report | `CSI ? Ps n` | Only CPR is supported (same as DSR). | Partial |
| DECSTR | Soft Terminal Reset | `CSI ! p` | Reset several terminal attributes to initial state. *less* | ✓ |

*There are two terminal reset sequences - RIS and DECSTR. While RIS performs almost a full terminal bootstrap, DECSTR only resets certain attributes. For most needs DECSTR should be sufficient.*

*The following terminal attributes are reset to default values:*

- *IRM is reset (dafault = false)*
- *scroll margins are reset (default = viewport size)*
- *erase attributes are reset to default*
- *charsets are reset*
- *DECSC data is reset to initial values*
- *DECOM is reset to absolute mode*

| DECSCUSR | Set Cursor Style | `CSI Ps SP q` | Set cursor style. *less* | ✓ |

*Supported cursor styles:*

- *empty, 0 or 1: steady block*
- *2: blink block*
- *3: steady underline*
- *4: blink underline*
- *5: steady bar*
- *6: blink bar*

| DECSTBM | Set Top and Bottom Margin | `CSI Ps ; Ps r` | Set top and bottom margins of the viewport [top;bottom] (default = viewport size). | ✓ |
| SCOSC | Save Cursor | `CSI s` | Save cursor position, charmap and text attributes. | Partial |
| SCORC | Restore Cursor | `CSI u` | Restore cursor position, charmap and text attributes. | Partial |
| DECIC | Insert Columns | `CSI Ps ' }` | Insert `Ps` columns at cursor position. *less* | ✓ |

*DECIC inserts `Ps` times blank columns at the cursor position for all lines with the scroll margins, moving content to the right. Content at the right margin is lost. DECIC has no effect outside the scrolling margins.*

| DECDC | Delete Columns | `CSI Ps ' ~` | Delete `Ps` columns at cursor position. *less* | ✓ |

*DECDC deletes `Ps` times columns at the cursor position for all lines with the scroll margins, moving content to the left. Blank columns are added at the right margin. DECDC has no effect outside the scrolling margins.*

# DCS

| Mnemonic | Name | Sequence | Short Description | Support |
| --- | --- | --- | --- | --- |
| SIXEL | SIXEL Graphics | `DCS Ps ; Ps ; Ps ; q Pt ST` | Draw SIXEL image starting at cursor position. | ✗ |
| DECRQSS | Request Selection or Setting | `DCS $ q Pt ST` | Request several terminal settings. *less* | Partial |

*Response is in the form `ESC P 1 $ r Pt ST` for valid requests, where `Pt` contains the corresponding CSI string, `ESC P 0 ST` for invalid requests.*

*Supported requests and responses:*

| *Type* | *Request* | *Response ( `Pt` )* |
| --- | --- | --- |

| | | | |
|---|---|---|---|
| *Graphic Rendition (SGR)* | `DCS $ q m ST` | *always reporting* `0m` *(currently broken)* | |
| *Top and Bottom Margins (DECSTBM)* | `DCS $ q r ST` | `Ps ; Ps r` | |
| *Cursor Style (DECSCUSR)* | `DCS $ q SP q ST` | `Ps SP q` | |
| *Protection Attribute (DECSCA)* | `DCS $ q " q ST` | *always reporting* `0 " q` *(DECSCA is unsupported)* | |
| *Conformance Level (DECSCL)* | `DCS $ q " p ST` | *always reporting* `61 ; 1 " p` *(DECSCL is unsupported)* | |

| | | | | |
|---|---|---|---|---|
| DECUDK | User Defined Keys | `DCS Ps ; Ps \| Pt ST` | Definitions for user-defined keys. | ✗ |
| XTGETTCAP | Request Terminfo String | `DCS + q Pt ST` | Request Terminfo String. | ✗ |
| XTSETTCAP | Set Terminfo Data | `DCS + p Pt ST` | Set Terminfo Data. | ✗ |

## ESC

| Mnemonic | Name | Sequence | Short Description | Support |
|---|---|---|---|---|
| SC | Save Cursor | `ESC 7` | Save cursor position, charmap and text attributes. | ✓ |
| RC | Restore Cursor | `ESC 8` | Restore cursor position, charmap and text attributes. | ✓ |
| DECALN | Screen Alignment Pattern | `ESC # 8` | Fill viewport with a test pattern (E). | ✓ |
| IND | Index | `ESC D` | Move the cursor one line down scrolling if needed. | ✓ |
| NEL | Next Line | `ESC E` | Move the cursor to the beginning of the next row. | ✓ |
| HTS | Horizontal Tabulation Set | `ESC H` | Places a tab stop at the current cursor position. | ✓ |
| IR | Reverse Index | `ESC M` | Move the cursor one line up scrolling if needed. | ✓ |
| DCS | Device Control String | `ESC P` | Start of a DCS sequence. | ✓ |
| CSI | Control Sequence Introducer | `ESC [` | Start of a CSI sequence. | ✓ |
| ST | String Terminator | `ESC \` | Terminator used for string type sequences. | ✓ |
| OSC | Operating System Command | `ESC ]` | Start of an OSC sequence. | ✓ |
| PM | Privacy Message | `ESC ^` | Start of a privacy message. | ✓ |
| APC | Application Program Command | `ESC _` | Start of an APC sequence. | ✓ |

## OSC

**Note**: Other than listed in the table, the parser recognizes both ST (ECMA-48) and BEL (xterm) as OSC sequence finalizer.

| Identifier | Sequence | Short Description | Support |
|---|---|---|---|
| 0 | `OSC 0 ; Pt BEL` | Set window title and icon name. *less* | Partial |

*Icon name is not supported. For Window Title see below.*

| Identifier | Sequence | Short Description | Support |
|---|---|---|---|
| 1 | `OSC 1 ; Pt BEL` | Set icon name. | ✗ |
| 2 | `OSC 2 ; Pt BEL` | Set window title. *less* | ✓ |

*xterm.js does not manipulate the title directly, instead exposes changes via the event* `Terminal.onTitleChange`*.*

| Identifier | Sequence | Short Description | Support |
|---|---|---|---|
| 4 | `OSC 4 ; c ; spec BEL` | Change color number `c` to the color specified by `spec`. *less* | ✓ |

`c` *is the color index between 0 and 255.* `spec` *color format is 'rgb:hh/hh/hh' where* `h` *are hexadecimal digits. There may be multipe c ; spec elements present in the same instruction, e.g. 1;rgb:10/20/30;2;rgb:a0/b0/c0.*