

Screen Commands

Screen instructions and functions

Screen Open INDEX, WIDTH, HEIGHT, NUMBEROFCOLOURS, PIXELMODE

Open a new screen

Parameters:

INDEX: The index of the screen to open. Any existing screen will be replaced by the new one

WIDTH: The width of the screen in pixels

HEIGHT: The height of the screen in pixels

NUMBEROFCOLOURS: the number of colors of the palette (optional)

PIXELMODE: "Lowres", "Hires", "Laced" or any combination

Screen close INDEX

Destroys the current screen or a given screen

Parameters:

INDEX: The index of the screen to destroy, if omitted will destroy the current screen

Screen Clone INDEX

Create an exact and synchronized copy of the current screen that can be displayed at another position and Z-order. Both screen share the same internal pixel buffers. Graphical operations are forbidden in the cloned screen

Parameters:

INDEX: The index of the screen to create, will replace an existing screen

Screen Hide INDEX

Make a screen disappear from display. The screen will remain active and drawing operation are still possible after this instruction

Parameters:

INDEX: The index of the screen (optional)

Screen Show INDEX

Make a hidden screen reappear on display

Parameters:

INDEX: The index of the screen (optional)

Screen Swap INDEX

Swaps the physical and logical buffers of a screen. (Deprecated in AOZ, legacy instruction, has no real effect)

Parameters:

INDEX: The index of the screen (optional)

Screen Display INDEX, X, Y, WIDTH, HEIGHT

Defines the display position and width of a screen

Parameters:

INDEX: The index of the screen to display

X: The horizontal coordinate of the top-left pixel of the screen on display (hardware coordinate)

Y: The vertical coordinate of the top-left pixel of the screen on display (hardware coordinate)

WIDTH: The number of horizontal pixels to display

HEIGHT: The number of vertical pixels to display

Screen Center INDEX, CENTERX, CENTERY

TOTEST! Enforces the centering of a screen

Parameters:

INDEX: The index of the screen to display

CENTERX: True to center the screen horizontally, False to leave the horizontal position unchanged

CENTERY: True to center the screen vertically, False to leave the vertical position unchanged

Screen Offset INDEX, OFFSETX, OFFSETY

Set the offset in the internal screen buffer of the top-left displayed pixel, allowing scrollings

Parameters:

INDEX: The index of the screen

OFFSETX: The horizontal offset (optional)

OFFSETY: The vertical offset (optional)

Screen To Front INDEX

Change the display order of the screen, and passes the screen in front of all other screens

Parameters:

INDEX: The index of the screen

Screen To Back INDEX

Change the display order of the screen, and passes the screen behind all other screens

Parameters:

INDEX: The index of the screen (optional)

Screen Hotspot INDEX, X, Y

Set the hot-spot of a screen to a given coordinate. The hot-spot is the position within the screen where the Screen Offset will have effect and around which rotation will be done

Parameters:

INDEX: The index of the screen (optional)

X: The horizontal position of the hot-spot

Y: The vertical position of the hot-spot

Screen Hotspot INDEX, FLAGS

Set the hot-spot of a screen to a given coordinate. The hot-spot is the position within the screen where the Screen Offset will have effect and around which rotation will be done

Parameters:

INDEX: The index of the screen (optional)

FLAGS: Flag of bits indicating the horizontal and vertical position of the hot-spot, 0: top or left, 1: center or middle, 2: right or bottom. Example: \$11 centers the hot-spot horizontally and vertically

Screen Rotate INDEX, ANGLE

TOTEST! Rotate a screen around it's hot-spot on display. Warning, on software renderers this instruction will slow down the application

Parameters:

INDEX: The index of the screen

ANGLE: The angle of the rotation of the screen. Default in radian, and degrees after the "Degree" instruction has been used

Screen Rotate ANGLE

TOTEST! Rotate the current screen around it's hot-spot on display. Does not affect the content of the screen. Warning, on software renderers this instruction will slow down the application

Parameters:

ANGLE: The angle of the rotation of the screen. Default in radian, and degrees after the "Degree" instruction has been used

Screen Skew INDEX, XSKEW, YSKEW

Applies a horizontal and vertical distortion to a screen during the display process

Parameters:

INDEX: The index of the screen

XSKEW: The number of pixel to shift at each horizontal pixel

YSKEW: The number of pixel to shift at each vertical pixel

Screen Skew XSKEW, YSKEW

Applies a horizontal and vertical distortion to the current screen during the display process. Does not affect the content of the screen

Parameters:

XSKEW: The number of pixel to shift at each horizontal pixel

YSKEW: The number of pixel to shift at each vertical pixel

Screen Scale INDEX, XSCALE, YSCALE

Resize a screen during the display process. Does not affect the content of the screen

Parameters:

INDEX: The index of the screen

XSCALE: The horizontal scale. 1= no effect, 0.5= half the width, 2= twice the width, etc.

YSCALE: The vertical scale. 1= no effect, 0.5= half the height, 2= twice the height, etc.

Screen Scale XSCALE, YSCALE

Resize the current screen during the display process. Does not affect the content of the screen

Parameters:

XSCALE: The horizontal scale. 1= no effect, 0.5= half the width, 2= twice the width, etc.

YSCALE: The vertical scale. 1= no effect, 0.5= half the height, 2= twice the height, etc.

Screen Copy To SOURCEINDEX, X1, Y1, X2, Y2, DESTINATIONINDEX, X3, Y3, X4, Y4, MODE

Copy an area from one screen to another or itself, resizing the area

Parameters:

SOURCEINDEX: The index of the source screen

X1: The horizontal coordinate of the top-left corner of the origin area to copy

Y1: The vertical coordinate of the top-left corner of the origin area to copy

X2: The horizontal coordinate of the bottom-right corner of the origin area to copy

Y2: The vertical coordinate of the bottom-right corner of the origin area to copy

DESTINATIONINDEX: The index of the destination screen

X3: The horizontal coordinate of the top-left corner of the destination area

Y3: The vertical coordinate of the top-left corner of the destination area

X4: The horizontal coordinate of the bottom-right corner of the destination area

Y4: The vertical coordinate of the bottom-right corner of the destination area

MODE: TODO! The drawing mode to use while drawing

Screen Copy To SOURCEINDEX, X1, Y1, X2, Y2, DESTINATIONINDEX, X3, Y3, MODE

Copy an area from one screen to another or itself, preserving the proportion of the area

Parameters:

SOURCEINDEX: The index of the source screen

X1: The horizontal coordinate of the top-left corner of the origin area to copy

Y1: The vertical coordinate of the top-left corner of the origin area to copy

X2: The horizontal coordinate of the bottom-right corner of the origin area to copy
Y2: The vertical coordinate of the bottom-right corner of the origin area to copy
DESTINATIONINDEX: The index of the destination screen
X3: The horizontal coordinate of the top-left corner of the destination area
Y3: The vertical coordinate of the top-left corner of the destination area
MODE: TODO! The drawing mode to use while drawing

Screen Copy To SOURCEINDEX, DESTINATIONINDEX, MODE

Copy one screen to another

Parameters:

SOURCEINDEX: The index of the source screen
DESTINATIONINDEX: The index of the destination screen
MODE: TODO! The drawing mode to use while drawing

Screen Copy SOURCEINDEX, SX, SY, SWIDTH, SHEIGHT, DESTINATIONINDEX, DX, DY, DWIDTH, DHEIGHT, MODE

TOTEST! Copy an area from one screen to another or itself, resizing the area

Parameters:

SOURCEINDEX: The index of the source screen
SX: The horizontal coordinate of the top-left corner of the origin area to copy
SY: The vertical coordinate of the top-left corner of the origin area to copy
SWIDTH: The width of the source area
SHEIGHT: The height of the source area
DESTINATIONINDEX: The index of the destination screen
DX: The horizontal coordinate of the top-left corner of the destination area
DY: The vertical coordinate of the top-left corner of the destination area
DWIDTH: The width of the destination area
DHEIGHT: the height of the destination area
MODE: TODO! The drawing mode to use while drawing

Screen Copy SOURCEINDEX, SX, SY, SWIDTH, SHEIGHT, DESTINATIONINDEX, DX, DY, MODE

TOTEST! Copy an area from one screen to another or itself, preserving the size of the area

Parameters:

SOURCEINDEX: The index of the source screen
SX: The horizontal coordinate of the top-left corner of the origin area to copy
SY: The vertical coordinate of the top-left corner of the origin area to copy
SWIDTH: The horizontal coordinate of the bottom-right corner of the origin area to copy
SHEIGHT: The vertical coordinate of the bottom-right corner of the origin area to copy
DESTINATIONINDEX: The index of the destination screen
DX: The horizontal coordinate of the top-left corner of the destination area
DY: The vertical coordinate of the top-left corner of the destination area
MODE: TODO! The drawing mode to use while drawing

X Screen INDEX, X

Convert a hardware horizontal coordinate into a screen coordinate. Hardware coordinates are different from screen coordinate only in retro-machine display emulation (Amiga, Atari etc.)

Parameters:

INDEX: The index of the screen
X: The hardware coordinate to convert

Value returned:

integer: The corresponding horizontal coordinate in the Screen

X Screen INDEX, X

Convert a hardware horizontal coordinate into a coordinate in the current active screen. Hardware coordinates are different from screen coordinate only in retro-machine display emulation (Amiga, Atari etc.)

Parameters:

INDEX: The index of the screen

X: The hardware coordinate to convert

Value returned:

integer: The corresponding horizontal coordinate in the current screen

Y Screen INDEX, Y

Convert a hardware vertical coordinate into a screen coordinate. Hardware coordinates are different from screen coordinate only in retro-machine display emulation (Amiga, Atari etc.)

Parameters:

INDEX: The index of the screen

Y: The hardware coordinate to convert

Value returned:

integer: The corresponding vertical coordinate in the given screen

Y Screen INDEX, Y

Convert a hardware vertical coordinate into a coordinate in the current active screen. Hardware coordinates are different from screen coordinate only in retro-machine display emulation (Amiga, Atari etc.)

Parameters:

INDEX: The index of the screen

Y: The hardware coordinate to convert

Value returned:

integer: The corresponding vertical coordinate in the current screen

Def Scroll To INDEX, X1, Y1, X2, Y2, DX, DY

Define a new scrolling zone in the current screen. This instruction has no visible effect until a "Scroll" instruction is used

Parameters:

INDEX: The index of the scrolling zone to define

X1: The horizontal coordinate of the top-left pixel of the rectangle to scroll

Y1: The vertical coordinate of the top-left pixel of the rectangle to scroll

X2: The horizontal coordinate of the bottom-right pixel of the rectangle to scroll

Y2: The vertical coordinate of the bottom-right pixel of the rectangle to scroll

DX: Signed horizontal shift to apply. 0= no scroll, -1= one pixel to the left, 1= one pixel to the right, etc

DY: Signed vertical shift to apply. 0= no scroll, -1= one pixel to the top, 1= one pixel to the bottom, etc

Def Scroll INDEX, X, Y, WIDTH, HEIGHT, DX, DY

Define a new scrolling zone in the current screen. This instruction has no visible effect until a "Scroll" instruction is used

Parameters:

INDEX: The index of the scrolling zone to define

X: The horizontal coordinate of the top-left pixel of the rectangle to scroll

Y: The vertical coordinate of the top-left pixel of the rectangle to scroll

WIDTH: The width in pixels of the rectangle to scroll

HEIGHT: The height in pixels of the rectangle to scroll

DX: Signed horizontal shift to apply. 0= no scroll, -1= one pixel to the left, 1= one pixel to the right, etc

DY: Signed vertical shift to apply. 0= no scroll, -1= one pixel to the top, 1= one pixel to the bottom, etc

Scrollt INDEX

Performs the action of scrolling for a pre-defined scrolling area. Moves the pixels in the desired direction. The empty zones at the extremities of the scrollign area, on left, top and/or right and bottom are left unchanged and will have to be

cleared

Parameters:

INDEX: The index of the scrolling area as defined with "Def Scroll"

Dual Playfield SCREEN1, SCREEN2

Associate the display of two screens into a parallax display. (Deprecated, use "Set Transparent" and "Screen Offset" to associate more than two screens together)

Parameters:

SCREEN1: The index of first screen, will be on top

SCREEN2: The index of first screen, will be in the back

Dual Priority SCREEN1, SCREEN2

Set the display priority of two screens associate in Dual Playfield. (Deprecated, use "Set Transparent" and "Screen Offset" to associate more than two screens together, and then "Screen To Front" or "Screen To Back" to handle the display priority)

Parameters:

SCREEN1: The index of first screen, will be on top

SCREEN2: The index of first screen, will be in the back

Phybase INDEX

Return the address of the first pixel in the bitmap buffer of the current screen (deprecated, there is no difference between logical and physical screen buffers in AOZ)

Parameters:

INDEX: The index of the screen

Value returned:

integer: A magical number representing the adress of the buffer, to be used later with "Poke" / "Doke" / "Loke" / "Peek" / "Deek" / "Leek" instructions. Not a real address in AOZ

Logbase INDEX

Return the address of the first pixel in the bitmap buffer of the current screen (deprecated, there is no difference between logical and physical screen buffers in AOZ)

Parameters:

INDEX: The index of the screen

Value returned:

integer: A magical number representing the adress of the buffer, to be used later with "Poke" / "Doke" / "Loke" / "Peek" / "Deek" / "Leek" instructions. Not a real address in AOZ

Physic INDEX

TODO! Return a magical number representing the physical buffer of the current screen, to be used in "Screen Copy" and all Screen instructions that necessitate a Screen Index. (deprecated, no such thing as physical or logic al screen in AOZ)

Parameters:

INDEX: The index of the screen

Value returned:

integer: A magical number representing the physical buffer of the screen. To be used wherever you need a screen index

Logic INDEX

TODO! Return a magical number representing the logical buffer of the current screen, to be used in "Screen Copy" and all Screen instructions that necessitate a Screen Index. (deprecated, no such thing as physical or logic al screen in AOZ)

Parameters:

INDEX: The index of the screen

Value returned:

integer: A magical number representing the logical buffer of the screen. To be used wherever you need a screen index

Autoback INDEX, MODE

Set the autoback background preservation system for graphical instruction (Deprecated, has no effect in AOZ)

Parameters:

INDEX: The index of the screen

MODE: A number from 0 to 2 included representing the mode to use

Appear SOURCE, DESTINATION, PIXELS, RANGE

TODO! Progressively draw one screen into another using a fading effect

Parameters:

SOURCE: Index of the source screen

DESTINATION: Index of the destination screen

PIXELS: Value used to perform the effect

RANGE: Range of the apparition in number of pixels (optional)

Zoom ... To ... SOURCE, X1, Y1, X2, Y2, DESTINATION, X3, Y3, X4, Y4

TODO! Copy and scale a rectangle from one screen to another.

Parameters:

SOURCE: Index of the source screen

X1: Horizontal coordinate of the top-left corner of the rectangle to zoom in the source screen

Y1: Vertical coordinate of the top-left corner of the rectangle to zoom in the source screen

X2: Horizontal coordinate of the bottom-right corner of the rectangle to zoom in the source screen

Y2: Vertical coordinate of the bottom-right corner of the rectangle to zoom in the source screen

DESTINATION: Index of the destination screen

X3: Horizontal coordinate of the top-left corner of the rectangle to zoom in the destination screen

Y3: Vertical coordinate of the top-left corner of the rectangle to zoom in the destination screen

X4: Horizontal coordinate of the bottom-right corner of the rectangle in the destination screen

Y4: Vertical coordinate of the bottom-right corner of the rectangle in the destination screen

Zoom SOURCE, SX, SY, SWIDTH, SHEIGHT, DESTINATION, DX, DY, DWIDTH, DHEIGHT

TODO! Copy and scale a rectangle from one screen to another.

Parameters:

SOURCE: Index of the source screen

SX: Horizontal coordinate of the top-left corner of the rectangle to zoom in the source screen

SY: Vertical coordinate of the top-left corner of the rectangle to zoom in the source screen

SWIDTH: Width of the rectangle to zoom in the source screen

SHEIGHT: Height of the rectangle to zoom in the source screen

DESTINATION: Index of the destination screen

DX: Horizontal coordinate of the top-left corner of the rectangle in the destination screen

DY: Vertical coordinate of the top-left corner of the rectangle in the destination screen

DWIDTH: Width of the rectangle to zoom in the destination screen

DHEIGHT: Height of the rectangle to zoom in the destination screen

XGr

Return the current horizontal coordinate of the graphical cursor in the current screen

XGr

Return the current vertical coordinate of the graphical cursor in the current screen

Reserve Zone NUMBER

Reserve memory to store graphical detection zones in the current screen (deprecated: number of zones is unlimited in AOZ)

Parameters:

NUMBER: (Optional) The number of zones to allocate. If omitted all zones will be erased (not deprecated without parameter)

ScIn INDEX, X, Y

Check if the given hardware coordinates are located above a given screen on display. Hardware coordinates are only different from screen coordinates for retro-machine emulation (Amiga, Atari etc.)

Parameters:

INDEX: The index of the screen to test

X: Horizontal hardware coordinate to test

Y: Vertical hardware coordinate to test

Value returned:

boolean: True if the given coordinate lay over the screen, False if not

ScIn X, Y

Find the top-most screen on display located under the given hardware coordinates. Hardware coordinates are only different from screen coordinates for retro-machine emulation (Amiga, Atari etc.)

Parameters:

X: Horizontal hardware coordinate to test

Y: Vertical hardware coordinate to test

Value returned:

integer: -1 if the coordinate lay outside of all the screen, or the index of the top-most screen if they lay inside of one

Mouse Screen

Return the index of the screen under the mouse

Value returned:

integer: -1 if the coordinate lay outside of all the displayed screens, or the index of the top-most screen if they lay inside of one

Screen Colour INDEX

Return the number of colours in the palette of a given screen

Parameters:

INDEX: The index of the screen to query

Value returned:

integer: The number of colours in the palette

Screen Colour

Return the number of colours in the palette of the current screen

Value returned:

integer: The number of colours in the palette of the current screen

Screen Base

Not implemented, deprecated, will return 0

Value returned:

integer: Return 0

Screen Width INDEX

Return the width in pixels of a given screen

Parameters:

INDEX: The index of the screen to query

Value returned:

integer: The width of the screen in pixel

Screen Width

Return the width in pixels of the current screen

Value returned:

integer: The width of the current screen in pixel

Screen Height INDEX

Return the height in pixels of a given screen

Parameters:

INDEX: The index of the screen to query

Value returned:

integer: The height of the screen in pixel

Screen Height

Return the height in pixels of the current screen

Value returned:

integer: The height of the current screen in pixel

Screen INDEX

Set the given screen index as the current screen, all graphical operation being directed to this screen after this instruction

Parameters:

INDEX: The index of the screen

Screen

Return the index of the current screen, -1 if no screen is opened when the function is called

Value returned:

integer: The index of the current screen

Hires

Return a magical number to be used in the "Screen Open" instruction, enforce a horizontal compression by half of the pixels

Value returned:

integer: 1

Lowres

Return a magical number to be used in the "Screen Open" instruction, display pixel with their original horizontal ratio

Value returned:

integer: 0

Laced

Return a magical number to be used in the "Screen Open" instruction, enforce a vertical compression by half of the pixels

Value returned:

integer: 2

Halfbright

Return a magical number to be used in the "Screen Open" instruction, and set the screen in Amiga-compatible Halfbright colour mode

Value returned:

integer: 4

X Hard

TOTEST! Converts a horizontal coordinate in a given screen to its equivalent in hardware coordinates taking into account the position, scale and rotation factor of the screen

Value returned:

integer: The hardware equivalent of the horizontal screen coordinate

X Hard

TOTEST! Converts a horizontal coordinate in the current screen to its equivalent in hardware coordinates taking into account the position, scale and rotation factor of the screen

Value returned:

integer: The hardware equivalent of the horizontal current screen coordinate

Y Hard

Converts a vertical coordinate in a given screen to its equivalent in hardware coordinates, taking into account the position, scale and rotation factor of the screen

Value returned:

integer: The hardware equivalent of the vertical screen coordinate

Y Hard

TOTEST! Converts a vertical coordinate in the current screen to its equivalent in hardware coordinates taking into account the position, scale and rotation factor of the screen

Value returned:

integer: The hardware equivalent of the vertical current screen coordinate

Alpha INDEX

Return the transparency Alpha value of a given colour index in the current screen palette

Parameters:

INDEX: The index of the colour in the colour palette

Value returned:

float: The alpha value, from 0 (fully transparent) to 1 (fully opaque)

Remap ... To ... SCOLOR, DCOLOR, X1, Y1, X2, Y2

Transforms the values of all the pixels in a rectangle matching a specific RGB value to another RGBA value. Warning, this operation can take a long time to process and make the browser irresponsive during a while

Parameters:

SCOLOR: The RGB value of the color to look for

DCOLOR: The RGBA value of the color to replace with

X1: The horizontal coordinate of the top-left corner of the origin area to scan

Y1: The vertical coordinate of the top-left corner of the origin area to scan

X2: The horizontal coordinate of the bottom-right corner of the origin area to scan

Y2: The vertical coordinate of the bottom-right corner of the origin area to scan

Remap ... To ... SCOLOR, DCOLOR, X, Y, WIDTH, HEIGHT

Transforms the values of all the pixels in a rectangle matching a specific RGB value to another RGBA value. Warning, this operation can take a long time to process and make the browser irresponsive during a while

Parameters:

SCOLOR: The RGB value of the color to look for

DCOLOR: The RGBA value of the color to replace with

X: The horizontal coordinate of the top-left corner of the origin area to scan

Y: The vertical coordinate of the top-left corner of the origin area to scan

WIDTH: The horizontal coordinate of the bottom-right corner of the origin area to scan

HEIGHT: The vertical coordinate of the bottom-right corner of the origin area to scan

Remap SCOLOR, DCOLOR

Transforms the values of all the pixels in the current screen matching a specific RGB value to another RGBA value.

Warning, this operation can take a long time to process and make the browser irresponsive during a while

Parameters:

SCOLOR: The RGB value of the color to look for

DCOLOR: The RGBA value of the color to replace with

Screen Mode

Return the "mode" parameter of a screen, as used in the "Screen Open" instruction

Value returned:

integer: integer: The magical number generated by the combination of Lowres, Hires, Laced or Halfbright

Screen Hot Spot X, Y

Set the hot-spot of the current screen. The pixel displayed at the coordinates set by "Screen Offset" will be located at these coordinates inside of the screen, and the screen will be shifted on the display

Parameters:

X: The horizontal coordinate of the hot-spot

Y: The vertical coordinate of the hot-spot

Screen Hot Spot INDEX, X, Y

Set the hot-spot of the given screen. The pixel displayed at the coordinates set by "Screen Offset" will be located at these coordinates inside of the screen, and the screen will be shifted on the display

Parameters:

INDEX: The index of the screen to modify

X: The horizontal coordinate of the hot-spot

Y: The vertical coordinate of the hot-spot

Screen Hot Spot FLAGS

Calculates the hot-spot of the current screen

Parameters:

FLAGS: Flag of bits indicating the horizontal and vertical position of the hot-spot, 0: top or left, 1: center or middle, 2: right or bottom. Example: \$11 centers the hot-spot horizontally and vertically

Double Buffer

Turns the display system into double-buffering. Deprecated: Double Buffering has no effect in AOZ

Set Transparent ..., ..., ... COLOR_INDEXES

Set one or more colours of the current screen as transparent. Will invoke a complete remapping of the screen that might take a long time. Use this instruction to make parallax scrolling displays

Parameters:

COLOR_INDEXES: A list of indexes of colours in the screen palette separated by a comma

Stop Transparent COLOR_INDEXES

Set one or more colours of the current screen as opaque. Will invoke a complete remapping of the screen that might take a long time.

Parameters:

COLOR_INDEXES: A list of indexes of colours in the screen palette separated by a comma

Set Alpha ... To ..., ... To ... INDEXES, ALPHA#

Set the alpha of one or more colours in the current screen. This effect of this instruction will only be visible when the next graphical instruction using this colour are executed.

Parameters:

INDEXES: The index of the colour in the screen palette

ALPHA#: The value of the alpha, 0= totally opaque, 1= totally transparent (colour will not be visible and leave "holes" in the screen)