

16Bit addressing + small screen

16Bit Pointer with max 256x256 resolution					Elements					
XML Name	box	label	button	gfx	list	checkbox	radiobutton	subwindow	window	shortcut
Byte	Box	Label	Button	GFX	List	Checkbox	Radiobutton	SubWindow	window	Shortcut
1	1	2	3	4	5	6	7	8	9	10
2	X pos	X pos	X pos	X pos	X pos	X pos	X pos	X pos	FocusPrevKey	ShortCutKey
3	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	FocusNextKey	Action NumberL
4	X size	Options	X size	X size	X size	X size	X size	X size	FocusEnterKey	Window JumpL
5	Y size	Text PointerL	Y size	Y size	Y size	Y size	Y size	Y size		Window JumpH
6	Options	Text PointerH	Options	Options	Options	Options	Options	FocusPrevKey		
7	Action NumberL	Fonts	Action NumberL	Action NumberL	Action NumberL	Action NumberL	Action NumberL	FocusNextKey		
8	Window JumpL		Window JumpL	Window JumpL	Window JumpL	Window JumpL	Window JumpL	FocusEnterKey		
9	Window JumpH		Window JumpH	Window JumpH	Window JumpH	Window JumpH	Window JumpH			
10	Color		Text PointerL	Gfx PointerL	Text PointerL	Text PointerL	Text PointerL			
11			Text PointerH	Gfx PointerH	Text PointerH	Text PointerH	Text PointerH			
12			Fonts		Fonts	Fonts	Fonts			
13					ListNumber	CheckboxNumber	RadioButtonNumber			
14					DownKey					
15					UpKey					
16					PageDownKey					
17					PageUpKey					
18										
19										
20										
21										
22										
23										
24										
Relevant options:	Focusable	Storage Method	Focusable	Focusable	Focusable	Focusable	Focusable			
		Multi-language	Rectangle	Rectangle	Storage Method	Rectangle=0	Rectangle=0			
		Transparency	Storage Method	Compressed	Multi-language	Storage Method	Storage Method			
			Multi-language	Storage Method	Transparency	Multi-language	Multi-language			
			Transparency	Multi-image		Transparency	Transparency			
				Image format						

Options: 1. Bit: Focusable, 2. Bit: Rectangle, 3. Bit: Compressed, 4. Bit: Storage Method, 5. Bit: Multi-language/image support, 6-8Bits: Image format or 6. Bit transparency

Focusable: 0: No, 1:Yes

Fonts: Low4Bit: Font without focus, High4Bit: Font with focus, a label uses all 8 bit for a single font

Storage Method: 0: Within Menu Data, 1: In pointer Array

Multi-language and Multi-image Support: 0: No multi language/image, 1: Multi language/image enabled

Image format (for gfx only): 0: Monochrome, 1: Greyscale 4Bit, 2: Color custom1, 3: Color custom2, 4: Color custom3, 5-7: Reserved (maybe png or jpg in the future?)

Transparency (for all elements with text): 0: No transparency, draw with window background color, 1: Dont draw unused pixels, keep the existing color

RadioButtonNumber: Low4Bit: Index in Table, High4Bit: Value within the Group

Required order of parameters, unused may be omitted: If the object has an Action Number and screen jump, they all must start at the same offset (except for the shortcut). The offset is currently +6 bytes from the object id
Then the options must start at the same address too. Currently +5 bytes from the object id

X pos
Y pos
XY posH
X size
Y size
XY sizeH
Options
ShortCutKey
Action NumberL

Data format for GFX: Converting everything to one long array, beginning at the left top position, processing a line (and not column) first

Uncompressed: One byte each 8 pixel, MSB is leftmost pixel, LSB is rightmost pixel

Compressed: MSB codes the color, reaming 7 bits say how often the color repeats

Action NumberH
Window JumpL
Window JumpH
Text/GFX PointerL
Text/GFX PointerH
Fonts
Color
List/Checkbox/RadioButton Number
DownKey
UpKey
PageDownKey
PageUpKey
FocusPrevKey
FocusNextKey
FocusEnterKey

Data format for text:
Simple ASCII String must end with a \0 byte
If multi-language is enabled, the language number is added as offset to the language index for dynamic content
If multi-language is enabled for local storage, the address is handled as an index and in the data field must be a table with addresses (and the selected language is used as offset within this index)
If multi-image is enabled for local storage, the address points to an extra data area. The format of this data area is:

Number of images	low byte
Number of images	high byte
Index for selected	image in imageindexstate array
2 (or 3) byte address	for each image

A Window Switch code of 0xffff (0xffffffff in 24 Bit mode) has the special meaning for returning from an SubWindow to a previous Window and restores the focus

The first object must start at address 1 in the binary data and must be a windows or global shortcut.
The byte at address 0 is not read and currently stores a version information about the binary encoding:
MenuDesigner: Version 1.0->0; Version 1.1->2 (allow global shortcuts, change SubWindow Return storage), Version 1.5:->3 (multi-language)
Version 1.6 ->4 (multi-image) Version 1.9 -> Multiple image formats;
Version 2.0 -> change image format description, 16bit now only uses 1 byte for action, the list index change action is no longer derived from the listId, but from the action number + 1, therefore it is only generated if a action is set

If an object should not perform a window jump, all address bytes have to be set to zero

After a window or subwindow, the objects for the window have to follow, the order of the objects determines the drawing and tab order
The objects for the window end, if a next window or subwindow or 0 byte as next object is found

All shortcuts stored before the first window are handled as global shortcuts

24Bit addressing + small screen

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2	X pos	X pos	X pos	X pos	X pos	X pos	X pos	X pos	FocusPrevKey	ShortCutKey
3	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	FocusNextKey	Action NumberL
4	X size	Options	X size	X size	X size	X size	X size	X size	FocusEnterKey	Action NumberH
5	Y size	Text PointerL	Y size	Y size	Y size	Y size	Y size	Y size		Window JumpL
6	Options	Text PointerH	Options	Options	Options	Options	Options	FocusPrevKey		Window JumpH
7	Action NumberL	Text PointerHx	Action NumberL	Action NumberL	Action NumberL	Action NumberL	Action NumberL	FocusNextKey		Window JumpHx
8	Action NumberH	Fonts	Action NumberH	Action NumberH	Action NumberH	Action NumberH	Action NumberH	FocusEnterKey		
9	Window JumpL		Window JumpL	Window JumpL	Window JumpL	Window JumpL	Window JumpL			
10	Window JumpH		Window JumpH	Window JumpH	Window JumpH	Window JumpH	Window JumpH			
11	Window JumpHx		Window JumpHx	Window JumpHx	Window JumpHx	Window JumpHx	Window JumpHx			
12	Color		Text PointerL	Gfx PointerL	Text PointerL	Text PointerL	Text PointerL			
13			Text PointerH	Gfx PointerH	Text PointerH	Text PointerH	Text PointerH			
14			Text PointerHx	Gfx PointerHx	Text PointerHx	Text PointerHx	Text PointerHx			
15			Fonts		Fonts	Fonts	Fonts			
16					ListNumber	CheckboxNumber	RadioButtonNumber			
17					DownKey					
18					UpKey					
19					PageDownKey					
20					PageUpKey					
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16Bit addressing + large screen

16Bit Pointer with max 4096x4096 resolution (LARGESCREEN)					Elements					
XML Name	box	label	button	gfx	list	checkbox	radiobutton	subwindow	window	shortcut
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2	X pos	X pos	X pos	X pos	X pos	X pos	X pos	X pos	FocusPrevKey	ShortCutKey
3	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	FocusNextKey	Action NumberL
4	XY posH	XY posH	XY posH	XY posH	XY posH	XY posH	XY posH	XY posH	FocusEnterKey	Window JumpL
5	X size	Options	X size	X size	X size	X size	X size	X size		Window JumpH
6	Y size	Text PointerL	Y size	Y size	Y size	Y size	Y size	Y size		
7	XY sizeH	Text PointerH	XY sizeH	XY sizeH	XY sizeH	XY sizeH	XY sizeH	XY sizeH		
8	Options	Fonts	Options	Options	Options	Options	Options	FocusPrevKey		
9	Action NumberL		Action NumberL	Action NumberL	Action NumberL	Action NumberL	Action NumberL	FocusNextKey		
10	Window JumpL		Window JumpL	Window JumpL	Window JumpL	Window JumpL	Window JumpL	FocusEnterKey		
11	Window JumpH		Window JumpH	Window JumpH	Window JumpH	Window JumpH	Window JumpH			
12	Color		Text PointerL	Gfx PointerL	Text PointerL	Text PointerL	Text PointerL			
13			Text PointerH	Gfx PointerH	Text PointerH	Text PointerH	Text PointerH			
14			Fonts		Fonts	Fonts	Fonts			
15					ListNumber	CheckboxNumber	RadioButtonNumber			
16					DownKey					
17					UpKey					
18					PageDownKey					
19					PageUpKey					
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24										

If the object has an Action Number and screen jump, they all must start at the same offset (except for the shortcut). The offset is currently +8 bytes from the object id
Then the options must start at the same address too. Currently +7 bytes from the object id
XY posH and XY sizeH: low 4 bit are the high Y and the high 4 bit are the high X position bits

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3	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	Y pos	FocusNextKey	Action NumberL
4	XY posH	XY posH	XY posH	XY posH	XY posH	XY posH	XY posH	XY posH	FocusEnterKey	Action NumberH
5	X size	Options	X size	X size	X size	X size	X size	X size		Window JumpL
6	Y size	Text PointerL	Y size	Y size	Y size	Y size	Y size	Y size		Window JumpH
7	XY sizeH	Text PointerH	XY sizeH	XY sizeH	XY sizeH	XY sizeH	XY sizeH	XY sizeH		Window JumpHx
8	Options	Text PointerHx	Options	Options	Options	Options	Options	FocusPrevKey		
9	Action NumberL	Fonts	Action NumberL	Action NumberL	Action NumberL	Action NumberL	Action NumberL	FocusNextKey		
10	Action NumberH		Action NumberH	Action NumberH	Action NumberH	Action NumberH	Action NumberH	FocusEnterKey		
11	Window JumpL		Window JumpL	Window JumpL	Window JumpL	Window JumpL	Window JumpL			
12	Window JumpH		Window JumpH	Window JumpH	Window JumpH	Window JumpH	Window JumpH			
13	Window JumpHx		Window JumpHx	Window JumpHx	Window JumpHx	Window JumpHx	Window JumpHx			
14	Color		Text PointerL	Gfx PointerL	Text PointerL	Text PointerL	Text PointerL			
15			Text PointerH	Gfx PointerH	Text PointerH	Text PointerH	Text PointerH			
16			Text PointerHx	Gfx PointerHx	Text PointerHx	Text PointerHx	Text PointerHx			
17			Fonts		Fonts	Fonts	Fonts			
18					ListNumber	CheckboxNumber	RadioButtonNumber			
19					DownKey					
20					UpKey					
21					PageDownKey					
22					PageUpKey					
23										
24										

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