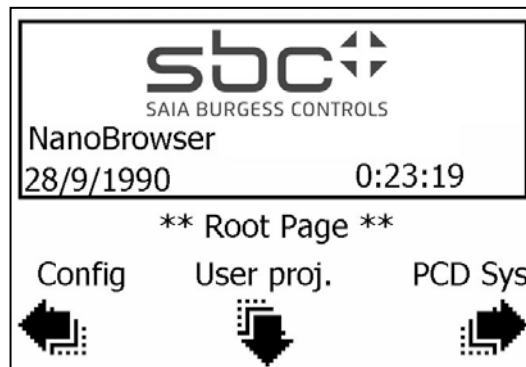


Saia PCD[®] eDisplay with Nano-Browser PCD7.D3100E

USER'S GUIDE eDisplay.



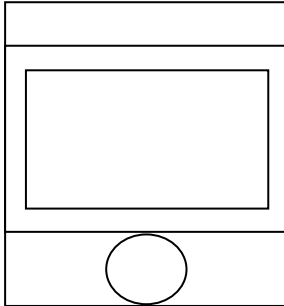
Revision No.	Description	date
EN14	Change of Logo	2014-06-06
V13	Max PPO per view was 30 is 60 Max PAINTER per view was 20 is 40	17.11.11
V 12	Using eDisplay with - new PG5 SP 2.0.150 combined with official FW version 1.14.23 of PCD2.M5xxx - Topic 10 (annex 1) is canceled	06.10.10
V 11	Using eDisplay with - new PG5 SP 2.0.150 (with Device configurator for eDisplay) combined with PCD2.M5xxx firmware version ≥ 1.14.11 → New topic 5	26.04.10
V 10	FW 054 Release version	07.12.09
V 09	eDisplay FW 053 combines with PCD2 FW 1.10.40) - additional comments in chapters - Quickstart demo is on a separate document ref. 26/877	28.10.09
V 08	Doc relative to new eDisplay FW 053 (PCD2 FW \$ 1.10.38) - chapter 6.3 Edit box default font are Tahoma 8 and 12 - chapter 8: new FW versions	05.10.09
V 07	Web editor 5-14-27 - new eD_PasswordDialog_UserLevel_5_14_26.esm - new SpiderHWprofile.SHP (dated on 24.06.09) new Chapter 9 regarding heap 2	15.07.09
V 06	New FW 051 → topic 3.3 - New setup menu was compiled with web-editor 5_14_23 IMasterSaia5_14_23.jar is necessary to browse it.	27.05.09
05	Not distributed	
04	NEW QUICK START → TOPIC 9 with new FW versions PCD2.M5 FW V 1.10.14 PCD7.D3100E FW V0.50	11.02.09
03	Update due to a new PCD2.M5xxx Firmware version and New eDisplay FW version	
02	Add topic 7.3: restrictions of Pilot Series (edisplay FW 047)	26.09.2008
01	Rearrangement and Update	11.09.2008
00	PRELIMINARY VERSION (for samples)	29.08.2008

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1. Technical Data

1.1. Mechanical Dimensions (mm)

Overall dimensions: 67 x 47 mm.



1.2. Electrical Data

Current consumption: 50 mA on +5V with Backlight on
10 mA on +5V with Backlight off

1.3. Display Data

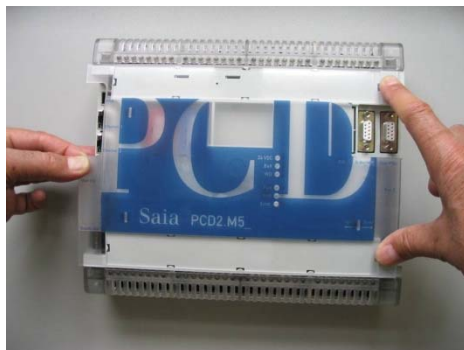
4-level grey scale graphic dot-matrix liquid crystal display
128 x 88 dots with 0.25 x 0.25mm dot size
Display view size: 25 x 35 mm

2. Mounting the Display



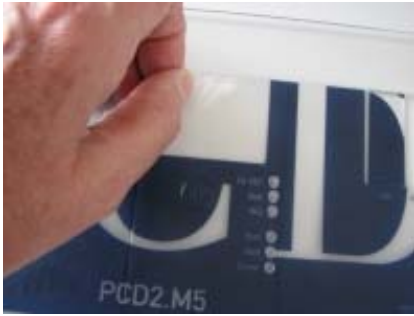
The eDisplay itself is an electronic device. Therefore handle it with ESD (electro static discharge) precautions!

Remove the cover of the PCD2.M5:
Hold both cover sides with your fingers and push the cover slightly to the left side.





REMOVE the protective transparent film on the back side of the cover



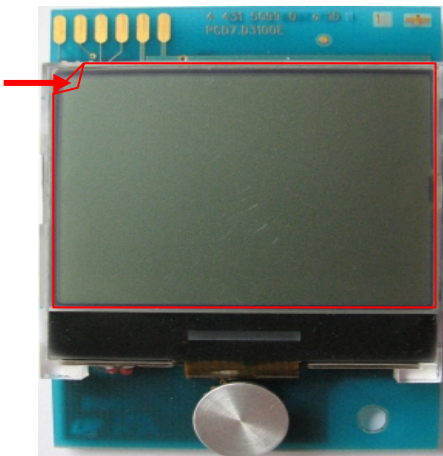
Recommendations for Cleaning

The use of abrasive cleaners and/or cleaning implements that may damage or scratch the coating should be avoided ! The recommended cleaning procedure for the removal of eventual adhesive traces:

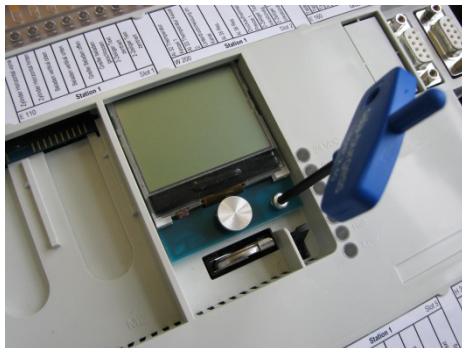
- use kerosene or white spirit and apply it with a clean soft rag.
- Final use clean water with a clean soft rag.



→ REMOVE the protective transparent film from the eDisplay



→ The eDisplay is inserted on the slant and pushed until it reaches the end stop. Fix it with the appropriate screw (3 x 6 Torx plus). Attention: possible with PCD2 from hardware version C1. (Hardware B don't support the eDisplay and the front plate of the Hardware C does not allow to insert the eDisplay on the slant.)



Finally: → replace the cover in placing your fingers on the four corners, and push slightly the cover to the right side.

3. Operation and Handling

3.1. Navigation Switch

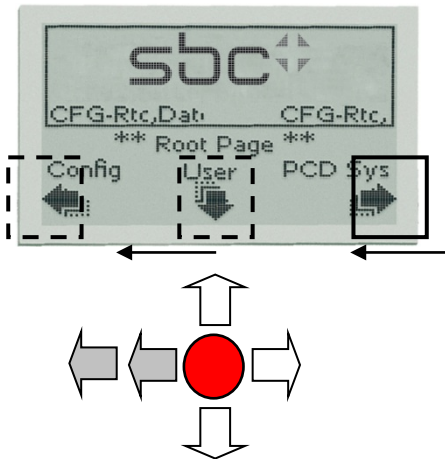
By pressing **up**, **down**, **left**, **right** it allows to:

- Moving a focus between the different painters and select it.
- Changing numeric or alphanumeric values.

By pressing on the centre it executes an **ENTER** command

3.2. Moving a focus between painters

Example: *By pressing twice on the left, the focus moves from the “PCD sys” painter to “Config” painter.*



3.3. Changing a alphanumeric character: → the rules

Select a field with editable numeric value or alphanumeric character (small letter only) with the navigation switch then press ENTER.

Example: Changing the html user start page.

- Change one (or several) character

Select the user start html field then pressing enter. Move the cursor left and right with the navigation switch to select the character that you want to change, then move the navigation switch up and down to select the new character.

- Add one character at first position

Select the user start html field then pressing enter, the first character is selected. Move the cursor with navigation switch left and select the character that you want to add then press enter.

-> 'start.html' becomes 'astart.html'

- In order to delete a character at „end“ position he can just make a space sign **“out” of the character you want to delete.** -> 'start.html' becomes 'start.htm ' -> 'start.htm')

- You cannot delete a character at „first“ position. Re-write the name. Example: ' estart.html'

- You cannot delete the space character at left. Rewrite 'estart.html'

Available characters.

/available numbers and characters in edit mode:
 const char digitFloatList[] = { '0','1','2','3','4','5','6','7','8','9', ' ','.', '-', '+', ' ' };

//for string editing mode

char signList[] = { 'a','b','c','d','e','f','g','h','i','j','k','l','m','n','o','p','q','r','s','t','u','v','w','x','y','z', ' ','_','0','1','2','3','4','5','6','7','8','9' ' ' };



Character Editing does work for PPO with STRING format

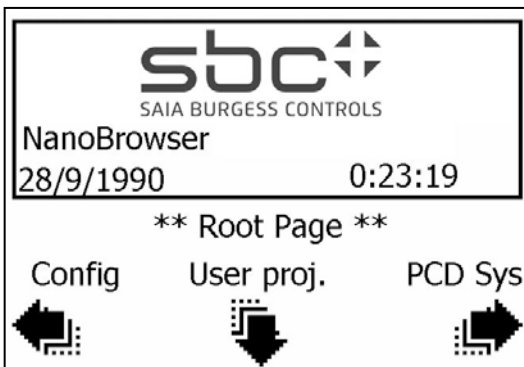
PCD texts can be editable with the eDisplay, only if the texts are in „small letters“ (and with STRING format)

4. Structure of the setup menu

The setup menu was created with the web-editor. The setup menu project is included in the PCD2 firmware.

4.1. Root Page.

The root page is the first page which is displayed after “switch on” the PCD



Date & Hour		Date & Hour of the PCD (cfg Tag)	
Config	Arrow button	To jump the configuration pages	See topic 4.2. & 4.3
PCD Syst	Arrow button	To jump the PCD system pages	See topic 4.4 to 4.6
User	Arrow button	To jump manually to the user program	See topic 8

4.2. Configuration page 1

Callout 1: User start page can be change. See topic 3.3

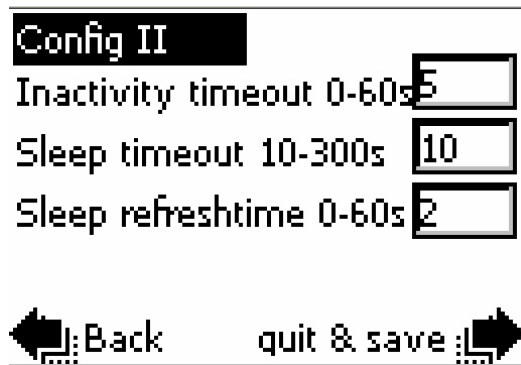
Callout 2: The default value '5' means that the user project is starting after a time out of 5 seconds. The value -1 allows starting manually the user project by pressing on the « user project » arrow in the root page.

Menu point	Description	min	max	Default	comment
User start page	Start page of the user program	2*	16*	estart.html	Editable * = text length

Setup timeout*	Time in second to wait in root page before loading user project.	-1 0	60	5	When -1, the user project is started manually (time = ∞) by clicking on the USER arrow button
Backlit timeout	Time in second to wait in backlight is switched off.	10	500	60	0 is prohibited
Contrast	Contrast of the display in %	25	100	75	By step of 25 (25 - 50 - 75 and 100)

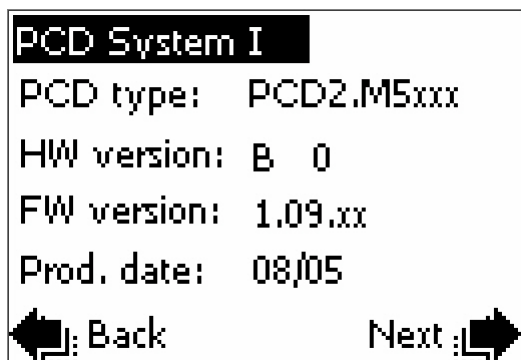
* Setup timeout: This timeout can be increased up to 60 sec (value is 60) and up to “∞ “ (value is -1). Using the intermediate values 0 to 2 is injudicious because we have not enough reaction time to stay in the setup menu.

4.3. Configuration page 2



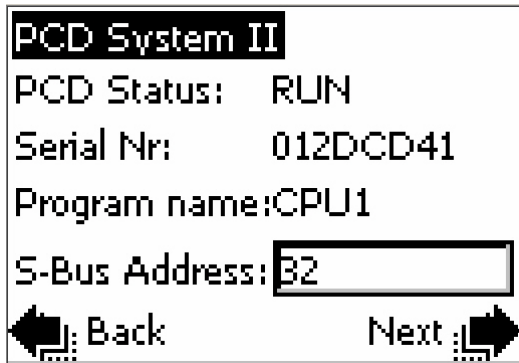
Menu point	Description	min	max	Default	comment
Inactivity timeout	Time in second after a period of inactivity.	3	60	5	Ex. During a changing value without ENTER confirmation, the previous value is displayed.
Sleep timeout	Time in second before communication is slowed down	10	300	120	User in activity time out.
Sleep refresh time	Refresh time when communication is slowed down	0	60	2	Reduce the number CPU access
Quit & save	Click on right arrow				Quit config 1 and 2 and save new parameter(s)
Quit	Click on right arrow				Quit config 1 and 2 without changing any parameter

4.4. PCD system page 1



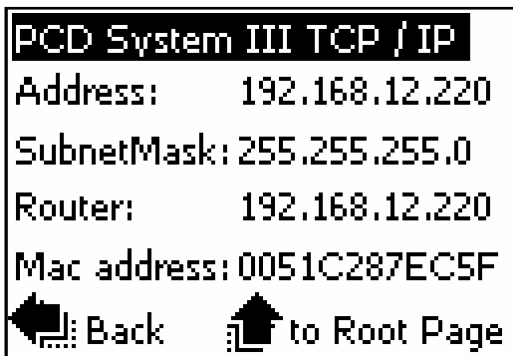
PCD type	Reference of the PCD2.M5	Read only
HW version	Hardware version of the PCD2	Read only
FW version	Firmware version of the PCD2	Read only
Prod. date	Production date of the PCD2 (year & week)	Read only
Back	Back to the root menu	Read only
Next	Go the PCD system page 2	Read only

4.5.PCD system page 2



PCD Status	Status of the PCD2: RUN / HALT	Read only
Serial Nr.	Serial Number of the PCD2	Read only
Program name:	Name of the PG5 Program (can be cut at end)	Read only
S-bus Address	S-bus address of the PCD2	Read/ write
Back	Back the PCD system page 1	
Next	Go the PCD system page 3	

4.6.PCD system page 3



IP Address	TCP/IP address of the PCD2	Read/ write
SubnetMask	Subnet Mask address	Read/ write
Router	Router address	Read/ write
Mac address	Mac address of the PCD2	Read only
Back	Back the PCD system page 2	
To root page	Go the root page	

5. PG5 Device configuration for eDisplay

With the PG5 SP 2.0.150 you can configure the setup menu of the “eDisplay”.
 This is available in combination with PCD2.M5xxx official firmware version 1.14.23

In the Device configurator:

Select the display module PCD7.D3100E

Selector

- Memory Modules PCD7 for PCD2/3
- Communications Modules PCD2 for PCD1/2
- Communications Modules PCD7 for PCD1/2/3
- Display Modules PCD7 for PCD2
 - PCD7.D3100E, LCD Display With Nano-Browser**

Onboard Communications		
Location	Type	Description
Display	PCD7.D3100E	LCD eDisplay, 4-stage grey per dot, 128x88 pixels.

Then adapt the default values

Properties

Display : PCD7.D3100E, LCD Display With Nano-Browser

- Power Consumption**
 - Power Consumption 5V [mA]
- eDisplay Configuration**

Start Page	estart.html
Setup Timeout [s]	5
Backlight Timeout [s]	60
Contrast [%]	75
Auto Escape Time [s]	5
Sleep Mode Time [s]	120
Sleep Erneuerungs Time [s]	2

Explanations and mini/max values: see the topics 4.2 and 4.3

6. USER project

6.1. What you must know to create a user project (recommendation)



6.1.1. User project start name

The default html user project start name is 'estart.html' – to change the html name see topic 3.3 Character Editing does work for PPO with STRING format

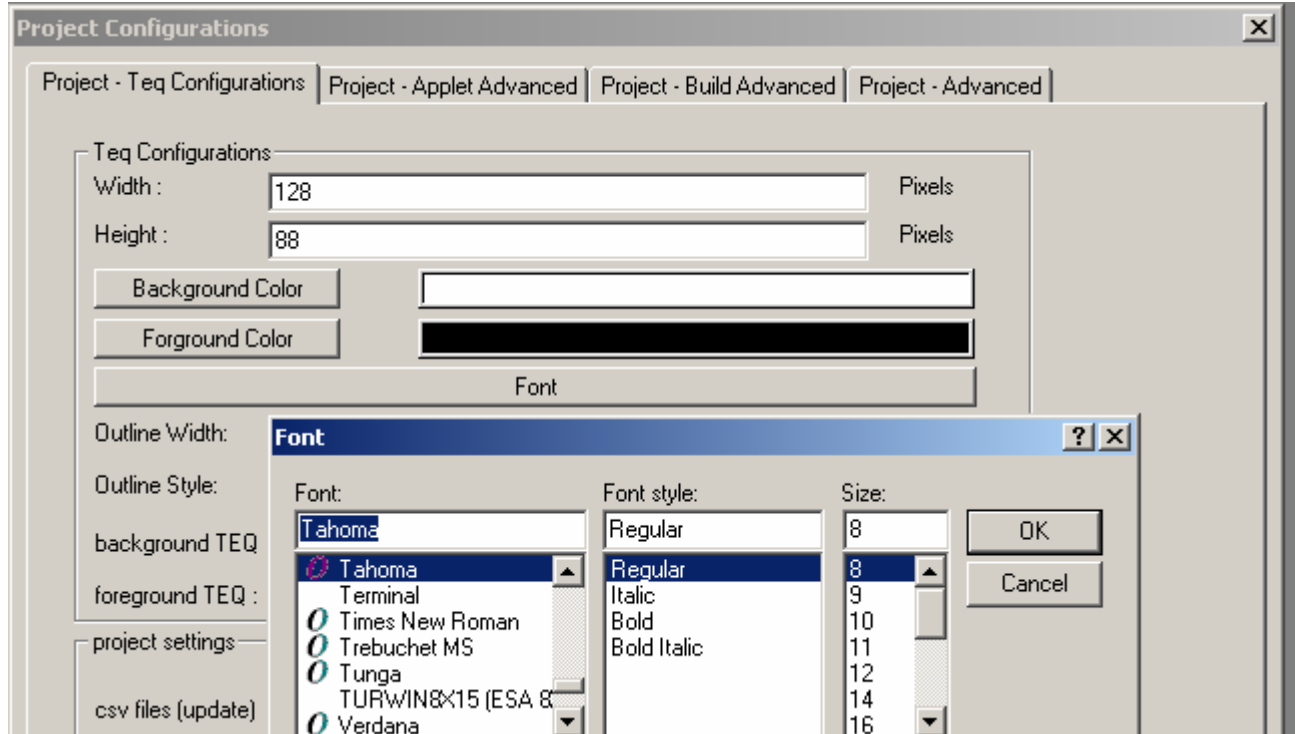
6.1.2. Maximum of PPOs, containers, painters ... per project and per view

	nber
Max PPO per project	100
Max Container per project	16
Max HTML Tag per project	1000
FlashDiskSizeKB	40960
Max PPO per view	60
Max Container per view	16
Max HTML Tag per view	1000
Max Painter per view	40

See also → /Web Editor/ SaiaDefaultSpiderHWProfile.shp

6.1.3. Fonts

Don't use any fonts. Please refer to the topic 5.3
 In the project configuration, select Tahoma regular 8,10 or 12 as default font.



6.1.4. Set focus macro

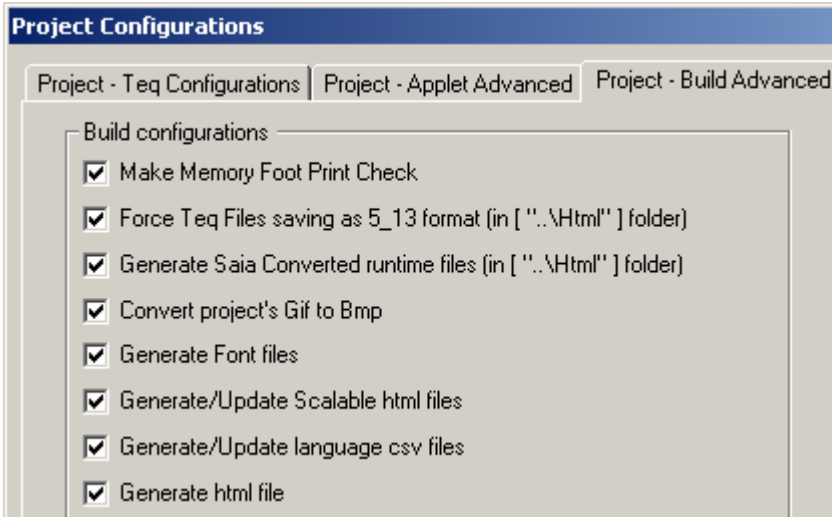
Cause of the system of navigation (no touch screen) , one but only one “EventP_SetFocus_onGainFocus” macro is necessary in each teq view. You advice to put this macro under a Jump action to another page.

Next :

Macro:
 EventP_SetFocus_onGainFocus

6.1.5. Web-editor Build advanced

Always, have a look to the Web-editor Build advanced before compiling !!

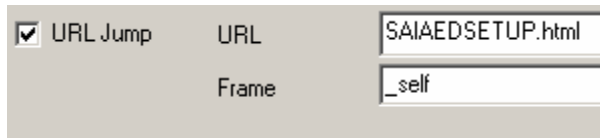


6.1.6. Jump to the setup menu

→ Access to the setup menu without switch off the PCD.

Recommendation:

Add a button with an "URL jump" to the "saiaedsetup.html"



6.1.7. Known restriction.

- Edit boxes do not support grey interior color but only black or white

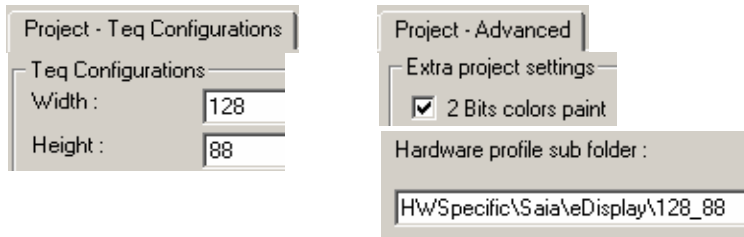
7. Web-Editor

7.1. Web-Editor Version

At least Version 5.14.23 or higher is necessary to start with the eDisplay with Firmware 51
 Reduced eDisplay functionality is available with delivered license key.

7.2. Specific Project Settings for eDisplay

This software version integrates new functionalities which are essential for the good implementation of a project for the eDisplay



7.3. Default Fonts, Fonts and Font generator

Default Fonts:

The two default fonts and size are:

- Tahoma regular 8
- Tahoma regular 12

These fonts can be used in all case, for PPOs, Containers, Strings or html tags.

Font generator

The use of other character sets and font sizes is possible with the font generator, which has been incorporated in this version. The relevant .fnt files are created automatically during the Web-Editor's «build».

Project configuration: Generate Spider Font files

Fonts

Painters	Format	Tahoma regular 8	Tahoma regular 12	Add font 1	Add font 2	Add font 3	Add font 4
Button + Static text	String	x	x				
	PPO	x	x				
	Container	x	x				
Edit-box	Html Tag	x	x	x	x	x	x
	PPO	x	x				
Multi-line label	Container	x	x				
	String	x	x				
Macros	Html Tag	x	x	x	x	x	x
Table control		x	x				
Drop down PPO		x	x				
Drop down html tag		x	x	x	x	x	x

Attention: Values are not displayed if edit boxes use other fonts than default Tahoma fonts 8 or 12. For example Arial 10,11,14,16 etc do not display values.

Exception regarding Edit Box fonts: You can select other fonts than Tahoma 8 and 10, provided that the selected fonts be already used as fonts for STATICTEXT (HTML TAG format)

7.4. Gif to Bmp converter

The eDisplay displays only monochrome pictures (icons) in bmp format. This software version contains a GIF to BMP format convertor, enabling you to display bmp pictures without having to use a special editor for conversion.

Project configuration: Convert project's Gif to Bmp

The Web-Editor project will have to be compiled, remembering to select the options: « Generate Spider Font files » and/or « Convert project's Gif to Bmp »

Creation of .fnt and .bmp files then takes place automatically.

7.5. Macros valid for eDisplay

Macro names	Status	Listed in Web-editor 5.14.27
EventP_SetFocus_onGainFocus_5_13_05.esm	Indispensable macro for each .teq view (see topic 5.1.4)	yes
eD_EventP_URLJump_isEqual_5_14_03.esm	Ok	yes
eD_ButonURLJump_onMouseDown_5_14_03.esm	Ok	yes
eD_EventP_ViewJump_onTimeout_5_14_03.esm	Ok	yes
eD_EventP_ViewJump_isEqual_5_14_03.esm	Ok	yes
eD_EventP_Logout_onTimeout_5_14_03.esm	Ok	yes
eD_EventP_writeSrc2Dst_onLost_5_14_03.esm	Ok	yes
eD_EventP_writeSrc2Dst_onRepaint_5_14_03.esm	Ok	yes
eD_EventP_writeSrc2Dst_onGain_5_14_03.esm	Ok	yes
eD_EventP_writeSrc2Dst_isEqual_5_14_03.esm	Ok	yes
eD_PasswordDialog_UserLevel_5_14_26.esm	Ok	yes
eD_DropDownList_5_14_03.esm	Ok	yes
eD_DropDownList_5_13_40.esm	Ok	yes
eD_TableControl_EditablePPO_PageJump_5_13_17.esm	Ok	yes
eD_EventP_URLJump_onTimeout_5_14_03.esm	Don't use it	yes
eD_Blinker_5_14_03.esm	Ok !! @BLINKO container variable does not blink with 1 sec/1 sec. for the period of 1 sec but with faster frequency.	yes

- All this macros are part of the Web Editor package under: HWSpecific/Saia/eDisplay/128_88/MacroLib

8. Browse the eDisplay pages on the PC

8.1. Browse the setup menu pages on the PC

The setup menu pages (x6) are part and parcel of the PCD2 firmware.

As any web pages, you can browse the setup menu pages on a PC.

Actually the setup menu was compiled with Web-editor 5_14_27, the imaster file is IMasterSaia5_14_27.jar

What's the drill? Copy the IMasterSaia5_14_27.jar into the flash module PCD7.R550xxx. (

Browse setup menu html files in 3 different sizes:



Scale 1:1 → http:// IPaddress/saiaedsetup.html

Scale 3:1 → http:// IPaddress/saiaedsetupx3.html

Scale 5:1 → http:// IPaddress/saiaedsetupVGA.html

(the scale 5:1 allows to display the setup pages in ~ VGA size → 640 x 440 pixels)

→ To use this feature, the file *IMASTERSAIA5_14_27.JAR* needs to be copied on the flash module PCD7.R550.

8.2. Browse the User project pages on the PC

As any web pages, you can browse your user project on a PC.

- IMASTERSAIAx_xx_xx.JAR is necessary !

Use the same IMasterSaia5_14_27.jar version number as your web-editor version.

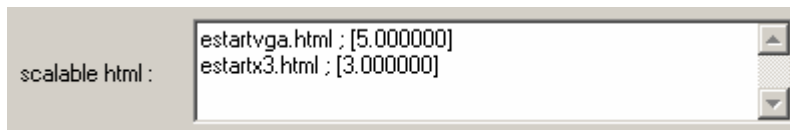
If you compile your user project with the Web-editor 5.14.27. you need the IMasterSaia5_14_27.jar to browse the project on the PC.

If you compile your user project with a new Web-editor 5.nn.nn version, you need the IMasterSaia5_nn_nn.jar to browse the project on the PC.

What's the drill? Copy the IMasterSaia5_14_27.jar or other into the flash module PCD7.R550xxx. (The IMasterSaia5_x,xx.jar version must always be corresponding to the web-editor version)

Use the scalable function of the Web Editor to create scalable html files.

We suggest to use the scale x3 or x5 in order to increase the teq pages with the same ration as the the setup menu pages (see chapter 7.1)



9. Error Message:

Out of memory heap 2:

- [Info Ininet regarding Heap 2:](#)

Heap2 (1040 Bytes) is in case of NanoBrowser only used for Container variables. Container variables have a fixed value length but variable name lengths.

The editor does not make a byte calculation but there is a limit given in the SpiderHWProfile.shp Hardware profile. There is no number of macro limitations.

Look the SpiderHWProfile.txt under the directory "web editor". This is automatically generated by the web editor during compiling !!!!