



## **EA DOG-Simulator manual**

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# 1 General

## DOG-Simulator "StartDog.exe"

The program „[StartDog.exe](#)<sup>[3]</sup>“ simulates all displays from EA DOG series. Display setting will be done via menu [Dog](#)<sup>[6]</sup>. The menu [Glass](#)<sup>[7]</sup> and [Led](#)<sup>[8]</sup> selects one of various types. This does mean that with this little program all display types and colors can be simulated. This simulator can be used alone but also together with our Test- and Demoboard [EA 9780-2USB](#)<sup>[11]</sup>.

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## Test-Board "EA 9780-2USB"

For easy startup, a USB test board [EA 9780-2USB](#)<sup>[11]</sup> is available that can be connected to a PC. All displays from EA DOG series will put into operation in a flash. There is no hardware or software knowledge necessary. The program „[StartDog.exe](#)<sup>[3]</sup>“ runs also with a connected EA 9780-2USB. Text and pictures (BMP) can be shown direct on the connected display.

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## 2 DOG Simulator

### 2.1 StartDog.exe V2.0

# EA DOG Simulator

*StartDog.exe V2.0*



You can download the DOG Simulator Software V2.0 free of charge from our Homepage as a .zip file. After unzip you easily can start our StartDog Simulator with a double click on the startdog.exe. It starts up immediately with a windows frame and a tool bar with 5 pull down buttons:

[File](#)<sup>[4]</sup> [Dog](#)<sup>[6]</sup> [Glass](#)<sup>[7]</sup> [Led](#)<sup>[8]</sup> [Help](#)<sup>[10]</sup>

## 2.2 File

Under the **File** Pull Down Button you can select special functions in four sections:



<b>Open File</b>	Open the File-Dialogbox where you can choose a text or graphic file;
<b>Power on Reset</b>	Makes a Reset to the external display, if it is connected with our test board <a href="#">EA 9780-2USB<sup>[11]</sup></a> to the USB I/F of the computer; After the Reset the module gets new initializing and the cursor moves to the left upper position, ready to write text to the display from the PC keyboard;
<b>Demo</b>	Starts a Demo with four alternating contents on the screen and optional on the display plugged to our <a href="#">EA 9780-2USB<sup>[11]</sup></a> ;
<b>Clear Display</b>	Clears the display and the cursor moves to the left upper position, ready to write text to the display from the PC keyboard;
<b>Show Window</b>	Shows or hides the frame of the DOG Simulation on the PC screen; When the frame with the menu is hidden you can find the menu with a right mouse click in the display area;
<b>Always on Top</b>	The Window of the DOG-Simulator always stays in front of the other software pages, whatever page or other Software you are opening;
<b>Minimize to Tray</b>	Hides the DOG window from the window screen into a small symbol in the tool bar; The <a href="#">EA 9780-2USB<sup>[11]</sup></a> is still

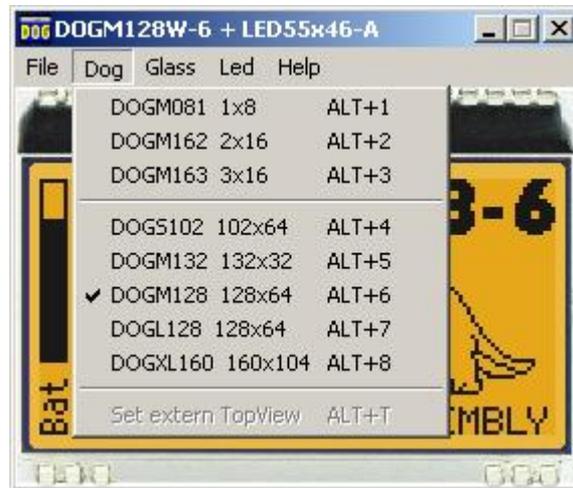
working as before.

**Exit**

Stores display organization, display type, color of backlight and contrast that had been changed in the last session and closes the application;

## 2.3 Dog

Under the **Dog** Pull Down Button you can select different display organisations in two sections:




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<b>DOGM081 1x8</b>	1 line with 8 digits
<b>DOGM162 2x16</b>	2 lines with 16 digits
<b>DOGM163 3x16</b>	3 lines with 16 digits

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<b>DOGS102 102x64</b>	Graphicdisplay 102 by 64 dots
<b>DOGM132 132x32</b>	Graphicdisplay 132 by 32 dots
<b>DOGM128 128x64</b>	Graphicdisplay 128 by 64 dots
<b>DOGL128 128x64</b>	Graphicdisplay 128 by 64 dots
<b>DOGXL128 160x104</b>	Graphicdisplay 160 by 104 dots

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<b>Set extern TopView</b>	If a graphic display is connected with our demo- and test board <a href="#">EA 9780-2USB</a> <sup>11</sup> to the USB I/F of the computer, content will be rotated by 180°; otherwise this option is grayed-out.
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## 2.4 Glass

Under the **Glass** Pull Down Button you have the choice to select different LCD display technologies in two sections:



**STN positive Y/G**  
**STN negative blue**  
**FSTN positive**  
**FSTN negative**

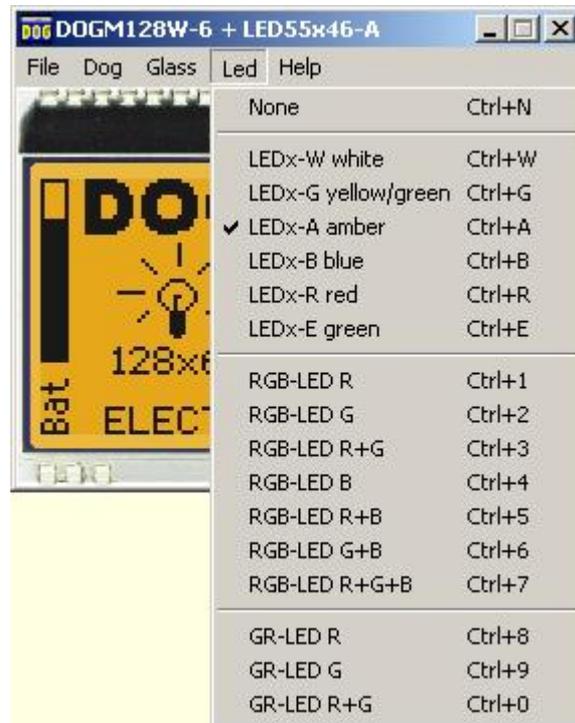
Black letters on background like backlight with Y/G shade;  
 Letters like backlight with blue or dark background;  
 Black letters on background like backlight;  
 Letters like backlight with black background;

**Set extern Contrast**

If a display is connected with our test board [EA 9780-2USB<sub>\(11\)</sub>](#) to the USB I/F of the computer; A window with a sliding resistor is opened on the monitor and you can move it with the mouse; A second click on this label closes the sliding resistor window. Note: Setting will be stored after closing the Simulator;

## 2.5 Led

Under the **Led** Pull Down Button you have the choice to select different LED backlight colors in three sections:



In the first section only **None** can be clicked, this is mainly for a reflective LCD Glass or for the appearance of any other Glass when the backlight is switched off (e.g. for a power safe mode); When [EA 9780-2USB](#)<sup>[11]</sup> is connected also the backlight of this display is switched off;

In the second section you can select the single color backlights white, yellow/green, amber, blue, red and green; The backlight of a connected [EA 9780-2USB](#)<sup>[11]</sup> naturally can not change;

In the third section you can select all the combinations when you are using a full color RGB backlight system (Please note that you need to change the [DIP-Switches](#)<sup>[12]</sup> on the [EA 9780-2USB](#)<sup>[11]</sup> for usage with the RGB-backlight):

<b>RGB-LED R</b>	only the red LED of 3-color backlight is on;
<b>RGB-LED G</b>	only the green LED of 3-color backlight is on;
<b>RGB-LED R+G</b>	only the red and green LED of 3-color backlight are on;
<b>RGB-LED B</b>	only the blue LED of 3-color backlight is on;
<b>RGB-LED R+B</b>	only the red and blue LED of 3-color backlight are on;
<b>RGB-LED G+B</b>	only the green and blue LED of 3-color backlight are on;
<b>RGB-LED R+G+B</b>	all 3 LED of 3-color backlight are on;

In the fourth section you can select all the combinations when you are using a duo color GR backlight system (Please note that you need to change the [DIP-Switches](#)<sup>12</sup> on the [EA 9780-2USB](#)<sup>11</sup> for usage with the GR-backlight):

<b>GR-LED R</b>	only the red LED of 2-color backlight is on;
<b>GR-LED G</b>	only the green LED of 2-color backlight is on;
<b>GR-LED R+G</b>	all 2 LED of 2-color backlight are on;

---

Basically every EA DOG LCD glass can be combined with every LED backlight system, if it is selectable;

But you will see very soon that not all combinations do make sense.

## 2.6 Help

Under the **Help** Pull Down Button you have the choice to select this Help-text or an info box:



---

### Help

This click shows you the Help-File;

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### About

This click shows you the software version of the DOG Simulator and whether the USB-Board is successfully connected to the PC;



## **3 EA 9780-2USB**

### **3.1 Features**

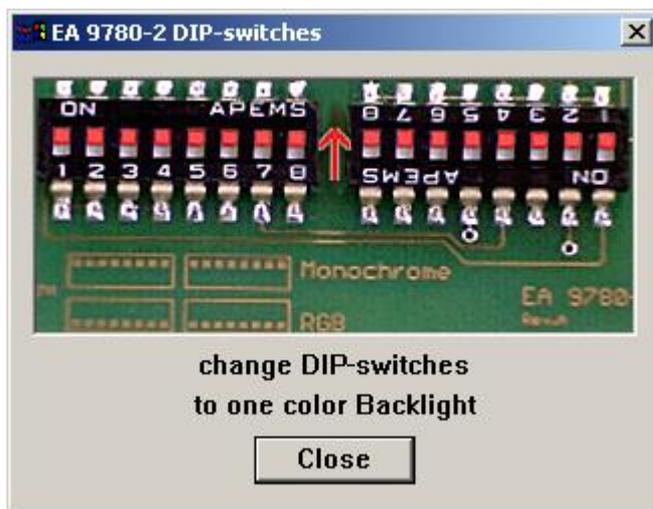
With that test board all displays from EA DOG series will put into operation in a flash. There is no hardware or software knowlegde necessary. The included USB cable performs easily the connection to the PC. Text and pictures (BMP) can be shown direct on the connected display.

- \* Connection to USB: simple Usage
- \* Good for all EA DOG Modules
- \* no power supply necessary
- \* with demo-text and demo-pictures
- \* individual text and pictures are supported also
- \* LED driving circuit integrated
- \* switch on and off LED backlight
- \* incl. blue illuminated USB cable (1.5m)

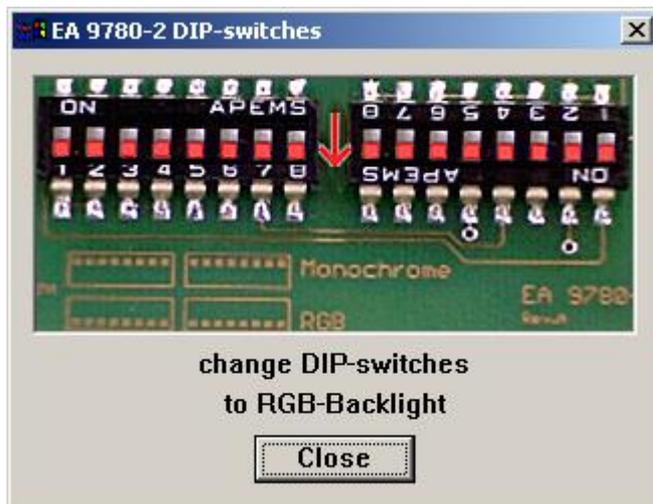
## 3.2 LED-backlight

The board EA 9780-2USB is ready to use for all LED backlights.

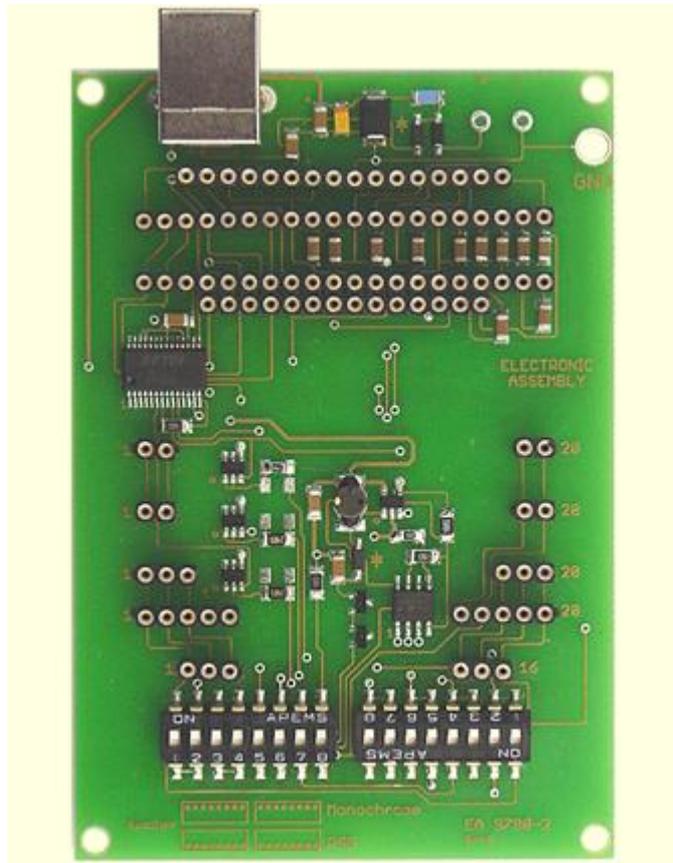
To operate the single-color LED versions white, yellow/green, amber, blue, red or green  
the DIP-switches must be changed to top position:



To operate the full-color RGB version EA LEDxxx-RGB or duo-color version EA LEDxxx-GR  
the DIP-switches must be changed to bottom position:



### 3.3 9780 - EMPTY



EMPTY - [DOGM081](#)<sup>[14]</sup> - [DOGM162](#)<sup>[15]</sup> - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#)<sup>[17]</sup> - [DOGM132](#)<sup>[18]</sup> - [DOGM128](#)<sup>[19]</sup> - [DOGL128](#)<sup>[20]</sup> - [DOGXL160](#)<sup>[21]</sup>

### 3.4 9780 - DOGM081



[EMPTY](#)<sup>[13]</sup> - [DOGM081](#) - [DOGM162](#)<sup>[15]</sup> - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#)<sup>[17]</sup> - [DOGM132](#)<sup>[18]</sup> - [DOGM128](#)<sup>[19]</sup> - [DOGL128](#)<sup>[20]</sup> - [DOGXL160](#)<sup>[21]</sup>

### 3.5 9780 - DOGM162



[EMPTY](#)<sup>[13]</sup> - [DOGM081](#)<sup>[14]</sup> - [DOGM162](#) - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#)<sup>[17]</sup> - [DOGM132](#)<sup>[18]</sup> - [DOGM128](#)<sup>[19]</sup> - [DOGL128](#)<sup>[20]</sup> - [DOGXL160](#)<sup>[21]</sup>

### 3.6 9780 - DOGM163



[EMPTY](#)<sup>[13]</sup> - [DOGM081](#)<sup>[14]</sup> - [DOGM162](#)<sup>[15]</sup> - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#)<sup>[17]</sup> - [DOGM132](#)<sup>[18]</sup> - [DOGM128](#)<sup>[19]</sup> - [DOGL128](#)<sup>[20]</sup> - [DOGXL160](#)<sup>[21]</sup>

### 3.7 9780 - DOGS102



[EMPTY](#)<sup>[13]</sup> - [DOGM081](#)<sup>[14]</sup> - [DOGM162](#)<sup>[15]</sup> - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#) - [DOGM132](#)<sup>[18]</sup> - [DOGM128](#)<sup>[19]</sup> - [DOGL128](#)<sup>[20]</sup> - [DOGXL160](#)<sup>[21]</sup>

### 3.8 9780 - DOGM132



EMPTY<sup>[13]</sup> - DOGM081<sup>[14]</sup> - DOGM162<sup>[15]</sup> - DOGM163<sup>[16]</sup>  
DOGS102<sup>[17]</sup> - DOGM132 - DOGM128<sup>[19]</sup> - DOGL128<sup>[20]</sup> - DOGXL160<sup>[21]</sup>

### 3.9 9780 - DOGM128



[EMPTY](#)<sup>[13]</sup> - [DOGM081](#)<sup>[14]</sup> - [DOGM162](#)<sup>[15]</sup> - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#)<sup>[17]</sup> - [DOGM132](#)<sup>[18]</sup> - DOGM128 - [DOGL128](#)<sup>[20]</sup> - [DOGXL160](#)<sup>[21]</sup>

### 3.10 9780 - DOGL128



[EMPTY](#)<sup>[13]</sup> - [DOGM081](#)<sup>[14]</sup> - [DOGM162](#)<sup>[15]</sup> - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#)<sup>[17]</sup> - [DOGM132](#)<sup>[18]</sup> - [DOGM128](#)<sup>[19]</sup> - DOGL128 - [DOGXL160](#)<sup>[21]</sup>

### 3.11 9780 - DOGXL160



[EMPTY](#)<sup>[13]</sup> - [DOGM081](#)<sup>[14]</sup> - [DOGM162](#)<sup>[15]</sup> - [DOGM163](#)<sup>[16]</sup>  
[DOGS102](#)<sup>[17]</sup> - [DOGM132](#)<sup>[18]</sup> - [DOGM128](#)<sup>[19]</sup> - [DOGL128](#)<sup>[20]</sup> - DOGXL160

## 4 Individual Pictures/Text

### How to bring Text/Pictures to the Display

**By Simulator Software:** When you have double clicked to the startdog.exe, immediately a demo page appears on the monitor, when a [EA 9780-2USB](#)<sup>[11]</sup> the demo page appears as soon as the right organization is chosen under the [Dog](#)<sup>[6]</sup> pull down button;

Additionally you can select under the [File](#)<sup>[4]</sup> pull down button the function Demo for other pictures/text;

**By Keyboard:** Easiest way to get individual text to the displays is to click under [File](#)<sup>[4]</sup> to Power on Reset or Clear Display. A full dot cursor appears blinking on the top left position. Now you can type with the keyboard the text you want to show in the display. When the line is full it writes to the next line, when it is at the end of the last line it shifts all content 1 line higher and writes again to the last line.

**Individual Pictures/Text:** If you want that the demo starts with your own text you can change the text files in the folder StartDog (DOGMxxx.txt) and save it. Immediately the program will take the new file and show your text.  
If you want to show your own graphic file you should copy it into the bitmap files in the folder StartDog (DOGxxx.bmp) and save it. Immediately the program will take the new file and will show your graphic.  
Also you can take a bmp- or text file with the mouse and drop it on the display area, it will include it.

**Notes:** The bmp-file must be a black and white one without gray scales and must not be bigger than the display resolution. Otherwise you will get an error note on the screen. Only 1pc. [EA 9780-2USB](#)<sup>[11]</sup> can be connected to a PC;

## 5 Troubleshooting

### **No Demo appears on the display plugged to the EA 9780-2USB**

Please click in the menu [Help](#)<sup>[10]</sup> the button About;  
The display may be damaged;

### **"Board: not connected" please check:**

Is the USB-cable plugged in well on both sides;  
Is the USB driver installed on the PC;  
The test board [EA 9780-2USB](#)<sup>[11]</sup> may be damaged;

### **Backlight is not working:**

The few LED pads on the one side should have contact to the LCD pins (2 times 2 or 3 pins);

### **Backlight is working but nothing is seen on the display:**

The display pins on the other side are not correct plugged in;

Is the right display type selected in the [Dog](#)<sup>[6]</sup> Menu;  
Please select "Set extern Contrast" in the Menu [Glass](#)<sup>[7]</sup>  
and slide with the mouse the sliding resistor to adjust contrast;

The display may be damaged;