DISPLAY ELECTRONIC ASSEMBLY VISIONS

ELECTRONIC ASSEMBLY
new display design

Display Solutions 2018

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ELECTRONIC ASSEMBLY – Displays designed to make things easy

Preamble

The company ELECTRONIC ASSEMBLY GmbH offers a wide range of high-quality displays for industrial use. Our clients come from a variety of sectors such as from the process automation, mechanical engineering, and information technology.
The products are known worldwide for their flexible use, coupled with „German Engineering“ and a reliable support. Our customers also appreciate for almost 40 years the existing expertise and short delivery times.
The long-term availability of our products make ELECTRONIC ASSEMBLY a reliable partner. for decades.
Thanks to our own development department and our own production we are able to react individually to customer requests when needed.
Welcome to this product overview on the latest display solutions from ELECTRONIC ASSEMBLY.

Reliable Displays

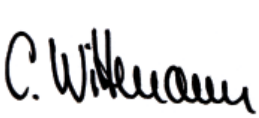
The product portfolio extends from simple 7-segment instrumentation displays to sophisticated color touch panel displays for use at information booths or in complex system controllers. ELECTRONIC ASSEMBLY also has products designed for extremely low power consumption, extended temperature range versions for harsh environments and solutions for special markets and applications such as Cyrillic fonts.

World Wide Sales

The company philosophy at ELECTRONIC ASSEMBLY is based on a simple vision. The management team of Stefan Eber and Carola Wittmann along with the entire staff is fully focused on “making things easy”. This vision is reflected in the design of the company’s products. The displays have a built-in controller which makes things a lot easier for the customer’s design engineering team. High-level language functions eliminate the need for system-level programming by the customer. The display controllers are shipped with an extensive set of sophisticated, pre-packaged graphic functions such as animation and bar charts. Developers can access these features with simple function calls. There is no need to write and test assembler programs for these functions. Many of the displays run right out of the box. The customer can get products to market much quicker and at lower cost.

Engineering - Made in Germany

ELECTRONIC ASSEMBLY has its own engineering development group and helps shape the technological landscape. In-house production, which is not necessarily the norm in today’s market environment, puts the company in full control of quality and gives it that little bit of extra flexibility which from the customer perspective often makes the crucial difference. The success of ELECTRONIC ASSEMBLY is reflected in the construction of new facilities in Gilching which have been the company’s new home since 2009.



Carola Wittmann

Stefan Eber

Multifunction TFT Display 5“ / 7“ / 10.1“

Juggle with objects playfully

TFT displays are indispensable in industrial and medical technology as well as in the private sector. Color displays simplify the operation and therefore revalue every device. Small and large applications benefit from the use of a color display. What is important, however, is an appealing screen layout and a clear and modern design. This is where the new concept of the uniTFT displays from ELECTRONIC ASSEMBLY is set. A number of graphically sophisticated objects are available, which can be adapted to the individual requirements by the simplest means. The graphical editor makes it easy to drag and drop elements to create nice screen pages. The properties of the individual objects can be edited at any time, actions (for example for touch keys) can be created.

Objects, Variables, Calculation

Any object can be placed, moved and deleted at any time. Fonts can be zoomed and rotated without loss. Choosen Windows character sets are stored directly in the display. Thanks to automatic ASCII and Unicode switching, all systems are flexibly supported; Chinese characters included.
Elegant effects for fading in and out or flying in are already integrated. Stylesheets can be used to create uniform designs. Images can be embedded as JPEG, PNG or SVG (also transparent), sound can be played in the form of MP3. Together with the integrated and battery-buffered time base, events can be documented together with the help of a time stamp or also a processes can be controlled completely autonomously.

* 5“ / 7“ / 10.1“
* PCAP Touch
* Work with Objects
* Move Objects
* Flying Graphic Elements
* SPI + I²C Bus + RS232
* Character set ASCII& UNICODE
* Single Supply +3.3V
* Incl. Touch Panel Controller
* $T_{Op.}$ -20..+70°C

USB and other Interfaces

The new EA uniTFT provides various interfaces to the outside world. An USB interface is available for flashing the onboard memory and debugging or also for normal operation. To run the display there are also an SPI, RS-232 and I²C bus interface available. If some external devices or actuators need to be operated, three more interfaces SPI, RS-232 and I²C bus can be used for that; they are declared as master.
4 analogue inputs and one PWM output enable processing of analog signals. 16 digital I / O (expandable up to 125) take over a wide range of control tasks. A video input directly delivers images, which can be displayed on the screen or stored on the integrated micro SD card (up to 32 GB).

Resistive or Multitouch-PCAP

Thanks to the high integration, it is easy to create an intuitive and simple to use interface. A variety of functions support the use. Individual key sizes and arrangements are possible. Also settings with a slider are quickly realized. The comprehensive functionality makes this display a complete, versatile HMI, which is extremely compact at the same time. The resistive touchpanel can

even be operated with a pencil or gloves; The PCAP version performs even behind a 4 mm thick glass or with thin gloves and is multitouch-capable.

Ordering Information

TFT 5“ with PCAP Touch	EA uniTFT050-ATC
TFT 7“ with PCAP Touch	EA uniTFT070-ATC
TFT 10.1“ with PCAP	EA uniTFT101-ATC
Quickstart w. 5“ and PCAP	EA QUICKuniTFT050C

Available now on AppStore and PlayStore

Augmented Reality App

ELECTRONIC ASSEMBLY is using augmented reality (AR) to bring its new uniTFT display module to the attention of potential users. The free app provides an unprecedented means of displaying in-depth information on what is probably the most innovative display module in the world. It is based on the print advert (see below) that is to appear as part of an advertising campaign across a large range of media for the uniTFT.

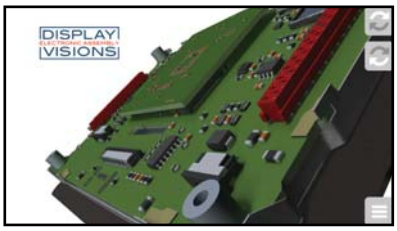
ANDROID APP ON Google play

Point the camera of a smartphone or tablet at the advert and the module comes alive, and at the same time a short humorous film is launched on the display module! With the aid of a 3D model, the app also provides valuable information on this new 5“ screen.

The use of augmented reality is becoming increasingly widespread for enriching visual representations of any object with additional computer-generated information directly on the screen. ELECTRONIC ASSEMBLY provides a wealth of information for the uniTFT via the augmented reality app that enables customers to explore the full potential of this advanced touchscreen unit. Among the many functions, a number of videos are available for users of the app to discover more about its performance and options as a control unit. The videos explain to users how to program an entry screen with the display module, how to incorporate a keyboard, the range of settings the touch panel offers and how to feed in analog signals and create virtual measurement instruments on the screen. With the aid of a 3D model, the app also explains the complex components of the display module which range from PCAP, Sound and RTC as well as USB, I2C, SPI and RS-232 interfaces right through to a card slot for a micro SD memory card.

Available on the App Store

The revolutionary uniTFT display module from ELECTRONIC ASSEMBLY is the first of its kind to offer the option of combining predefined objects on the screen, rotating them, zooming in on them and assigning attributes. The wide range of possibilities offered by this display module considerably increases the productivity of systems integrators and developers, since it allows developers to produce control elements and display tools graphically and to equip them with real functions.



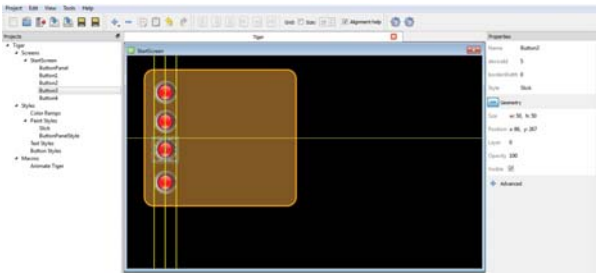
The app is available via Google Play for devices with an Android operating system, while iOS users can source it from the Apple App Store free of charge. Search for “UNITFT” or use the QR code on the left.

Free of charge tool for uniTFT

uniSKETCH for Windows incl. Simulator

Create screens intuitively

With a graphics tool, specially adapted to the abilities of this display, screen layouts and user interfaces are created easyly. Drag objects into the virtual screen and resized them in size, angle and position using the mouse. More properties of an object can be adjusted pixel-wise at any time via property menu function. Standardized stylesheets help you building an appealing layout.



* Create pages via Drag and Drop
* Integrated Simulator
* Group Objects
* USB Download
* Edit Text- and Paintstyle
* Use Windows Character
* Write Macros
* Design Touch Keys

Functions for grouping objects, as well as alignment tools and grid help are built-in to preserve the symmetry. Images, sounds and Windows fonts in any size are quickly selected and integrated.
Macros are created by a text editor. Since each object has an individual ID, it can therefore also be manipulated extensively later.
If the simulator is also installed, the contents as well as the function (e.g. touch buttons) can be tested immediately - even without buying a display. Also the inputs and outputs can be simulated on the Windows PC. Also the download to the display requires only one mouse click.

Start immediately

EA QUICKuniTFT050C

The starter pack

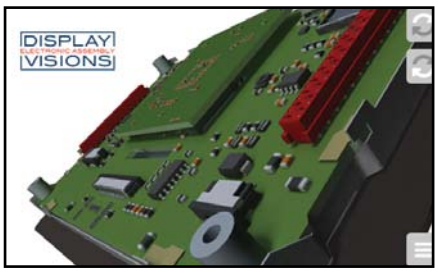
Everything in it, everything to it: here you can start immediately. You will get a display with PCAP (capacitive touchpanel) and a testboard with loudspeaker and connection clamp for 3.3V. The display is immediately running and shows a detailed demo.
After installing uniSKETCH on a Windows computer, you connect the USB cable and have access to many examples and more demos. Or you can start your own project right away!

USB + SPI, I²C, RS-232

All interfaces are led out on the board and can be reached directly via solder pads. Also the analog inputs and two of the digital inputs and outputs. The USB connector is installed directly on the display.

Disconnect the display and...

...put it into the application: 4 sockets with M3 female thread fix the display stable in the housing. The electrically contact is made via 2 red sockets directly on a circuit board behind it or via an IDC cable.



Even if the display is already installed in the application, it can be reprogrammed at any time without removal via the USB cable.
Alternatively, you can copy your project on a mico-SD card and exchange the SD-card. This is how you easily transfer your new functions to the display.

Open for other display sizes

Both the objects and the display are freely scalable to other sizes such as e.g. 10.1“ and 7“.

Ordering Information

Quick Start 5“ with PCAP	EA QUICKuniTFT050C
Quick Start 7“ with PCAP	EA QUICKuniTFT070C
Quick Start 10.1“ with PCAP	EA QUICKuniTFT101C

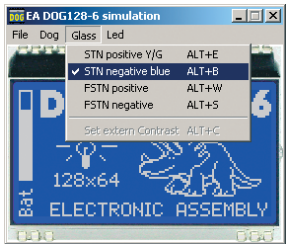
EA DOG series

Simply Ingenious!
3.3V - SPI - different colors

Display specialist ELECTRONIC ASSEMBLY in Gilching/Germany is introducing an exceptionally versatile line of alphanumeric displays for use in industrial and commercial applications. The high-contrast, easy-to-read LCD super-twist display modules of the EA DOG family require a mere 3.3 or 5 V to operate. Negative auxiliary voltage is also not required for the 3.3 V systems – a world first. This allows developers to keep their power supply simple and economical.

Full Color Backlight

Another clever idea is that the display and illumination units can be ordered separately. This makes it possible to implement numerous designs with different sizes and colors. Customers can choose from five display units and six LED background illumination schemes, including one that covers the entire RGB color spectrum. Three text display units are offered for viewing one, two, or three lines of data, which are available with different font sizes. The variety of display types, font sizes, and



background illumination schemes translates into a total of 63 „customization“ options for character displays and there are a lot more graphic types also.

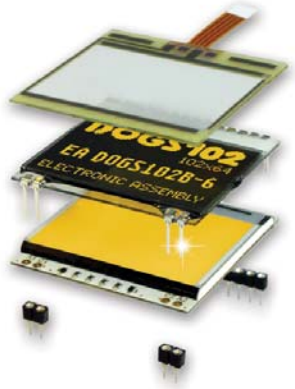
Two or three separate LED paths are available for the unicolor backlights, so the illumination unit can therefore be operated using a 3.3 V or a 5 V power supply.

Easy mounting

Keeping the illumination and display concept separate also enables extremely flat layouts. Without the illumination unit, the display is only 2.0 mm thick, and even when the latter is fitted, the 5.8 mm build height provides for a very flat configuration. The display can be mounted frameless by having it soldered directly to the circuit board.

An ST 7036 display controller is included in the display units despite their small size. Four-bit, eight-bit, and SPI interfaces are offered to connect to the outside world. The operating range for the displays is between -20 °C and + 70 °C, making them compatible with industrial applications, and all variants can be ordered in quantities of one or more.

* super flat: 2.0~6.5mm
* Graphic 102x64, 132x32, 128x64, 160x104
* Character 2x16, 3x16, 4x20, 1x8
* real 3.3V operation
* SPI interface, low power: 150 / 250 µA
* display and backlight separate
* white LED B/L runs from 3 mA
* Standard displays



Ordering Information (Selection)

240x128 blue/white	EA DOGXL240B-7
102x32 black&white negative	EA DOGS102S-6
3x16 / 3.65mm yellow/green	EA DOGM163L-A
LED backlight unit full color	EA LED55x31-RGB
LED backlight unit white	EA LED55x31-W

For industrial applications

Compatible TFT Series from 3.5“ to 7“

Same pinout for all!

Who is not at least once desperate at the different pin assignments of different TFT displays? This is coming to an end now. All TFT displays from our company have an identical connection with 40 pins in a grid of 0.5mm. The pin assignment itself is also identical. A matching ZIFF connector is available as an accessory. The displays have been individually developed for industrial applications and are available in a long term. The lifetime is 50,000 hours and the operating temperature range is from -20 to + 70°C. In the backlight, bright, high-quality LEDs are installed.

Pin	Symbol	Function
1	VLED-	LED backlight
2	VLED+	LED backlight
3	GND	Power ground
4	VCC	Power voltage
5	R0	Red data
6	R1	Red data
7	R2	Red data
8	R3	Red data
9	R4	Red data
10	R5	Red data
11	R6	Red data
12	R7	Red data
13	G0	Green data
14	G1	Green data
15	G2	Green data
16	G3	Green data
17	G4	Green data
18	G5	Green data
19	G6	Green data
20	G7	Green data
21	B0	Blue data
22	B1	Blue data
23	B2	Blue data
24	B3	Blue data
25	B4	Blue data
26	B5	Blue data
27	B6	Blue data
28	B7	Blue data
29	GND	Power ground
30	CLK	Pixel clock
31	DISP	Display on/off
32	Hsync	Horizontal sync
33	Vsync	Vertical sync
34	NC	No connection
35	NC	No connection
36	RESET	Hardware reset
37	XR	Touch Right
38	YD	Touch Down
39	XL	Touch Left
40	YU	Touch Up

24-bit RGB

The interface is designed as a parallel RGB interface for a color depth of up to 24 bits. The interface is compatible with most graphic controllers on the market. The supply voltage is 3.3V.

Touch panel

The displays are also available with an integrated touchpanel. Depending on the application, there are 2 different versions available:
The resisive touchpanel (order codes „TP“) is absolutely easy to use because it works on pressure. Any pressure applied to the surface, whether with a finger, glove or pen, triggers an action. Reading out the position is performed by measuring resistance values in the X and Y directions. This technology does not suffer to dirt and water.
The capacitive version (ordering codes „TC“) recognizes fingers and is multitouch-capable (up to 5 positions). Shipped out with a controller, which already takes over the reading and provides the finished data. The connection is done via an I²C bus interface. The PCAP version offers a glossy glass surface, robust against scratching and chemicals.
These TFT displays are standard articles and available also in small quantities.

TFT Displays				
Ordering Code	Size	Resolution	Dimensions	Optional
EA TFT035-32ANN	3.5“	320x240	76.9 x 63.9 x 3.26	Res. Touch, PCAP
EA TFT043-42ANN	4.3“	480x272	105.5 x 67.2 x 3.0	Res. Touch, PCAP
EA TFT050-84ANN	5“	800x480	120.7 × 75.8 ×2.8	Res. Touch, PCAP
EA TFT052-41ANN	5.2“	480x128	140.4 x 49.9 x 3.0	PCAP
EA TFT057-32ANN	5.7“	320x240	141.1 x 101.6 x 6.5	Res. Touch, PCAP
EA TFT070-84ANN	7“	800x480	165.0 x 100 x 5.8	Res. Touch, PCAP

* 3.5“ ~ 7“ pin compatible
* with and w./o. touchpanel
* PCAP and resistiv
* fast design-In
* made for industrial equipment
* tools and demo board
* $t_{Op.}$ -20..+70°C

Ordering Information (Selection)

TFT 3.5“ w./o. touchpanel	EA TFT035-32ANN
TFT 4.3“ w./o. touchpanel	EA TFT043-42ANN
TFT 5“ w./o. touchpanel	EA TFT050-84ANN
TFT 5.2“ w./o. touchpanel	EA TFT052-41ANN
TFT 5.7“ w./o. touchpanell	EA TFT057-32ANN
TFT 7“ w./o. touchpanel	EA TFT070-84ANN
TFT 7“, resist. touchpanel	EA TFT070-84ATP
TFT 7“ with PCAP	EA TFT070-84ATS
ZIFF connector, bottom contact	EA WF050-40S
ZIFF connector, top contact	EA WF050-40T

7“ Intelligent Display with Acoustic Feedback

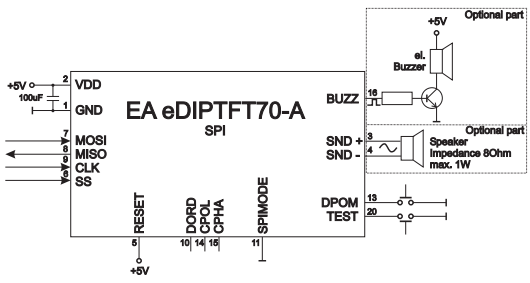
The 7-inch EA eDIPTFT70-ATP made by ELECTRONIC ASSEMBLY sets new design standards for interactive operator control systems. Brilliant display quality, 800 x 480 pixel resolution, built-in intelligence and innovative, user-friendly features provide the ideal platform for development of interactive controls. For example, a virtual keyboard can be embedded directly into the graphic display, and the display is also capable of providing acoustic feedback to the user.

Capacitive PCAP or resistive Touch Panel

These features make it much easier to program an interactive user interface. Aa a standard all displays can be shipped with or without touch panel, the 4.3“ and the 7“ alternatively with a capacitive (PCAP) or resistive one. A virtual keyboard can be generated on the touch panel screen with just a few instructions which resemble high level language programming code. The keyboard functionality includes an Edit Box which enables users to view what they have entered and make any necessary corrections prior to submitting the data.

RS-232, I²C, SPI

Programming is very simple and straightforward. Powerful instructions which resemble high level language code enhance productivity during solution development and reduce time to market. Lines, areas and bar graphs can be defined and displayed with a single instruction. Defining the appearance, size, placement and function of keys and buttons is equally fast and easy.



The EA eDIPTFT70-ATP offers a number of other features which support user-friendly programming and sophisticated image design including a flash memory to store fonts, images, animation and macros. Eight pre-defined fonts are provided. TrueType fonts can also be imported. Input data can be displayed on pre-defined virtual analogue instruments which can be tailored to suit the needs of the user. Built-in macro pages and string tables are provided to support multiple languages, an important consideration for equipment and systems which are destined for export markets.

* 3,2“ - 4,3“ - 7“
* No Controller Board required !
* SPI + I²C Bus + RS232
* Character Set & Graphic Functions
* Single Supply +5V (3.2“ also +3.3V)
* Incl. Touch Panel Controller
* $T_{Op.}$ -20..+70°C

Development Support

An evaluation kit is available to help you get your development project started. A USB port provides connectivity to a PC where software development takes place.

Integration of the intelligent display into a device or system controller is very easy from the technical standpoint. Three different ports are available for communication with the system. Only one supply voltage is needed. A mounting bezel is available as an option.

Ordering Information (Selection)

TFT 3.2“ with Touchpanel	EA eDIPTFT32-ATP
TFT 4.3“ with Touchpanel	EA eDIPTFT43-ATP
TFT 5,7“ with Touchpanel	EA eDIPTFT57-ATP
TFT 7“ with PCAP-Touch	EA eDIPTFT70-ATC
USB Evaluation Kit incl. Touchpanel Display 7“	EA EVALeDIPTFT70
Mounting panel for 7“	EA 0FP801-70SW

Intelligent Display Cuts Development Time

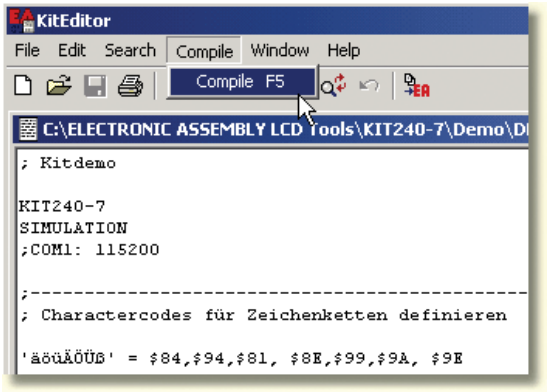
ELECTRONIC ASSEMBLY has developed a graphic display series whose numerous functions cover a wide variety of potential applications. Built-in intelligence also helps drastically cut development time.

2.8“ ~ 7“ with and without Touch Panel

The EA eDIP160W-7 offers an abundance of clever graphics functions that can be directly accessed by the development engineer without having to program at the pixel level. Eight predefined fonts are included and can be accurately positioned (down to the pixel) and adapted to meet individual needs. Up to 32 fonts can be stored in the integrated flash memory. All fonts can be scaled as required and rotated in 90-degree increments. The internal memory can also store other types of data, such as images, animations, and macros.

Lots of Fonts and Functions

Many geometric functions are likewise integrated for displaying bar graphs, frames, and switches, for example. Analog rotary and pointer instruments can be easily visualized using a free application called “LCD Tools”.



The display unit features two analog inputs for this purpose.
The optional variant with touch panel makes it possible to operate the display using graphic controls that change dynamically. Up to 40 buttons, switches, or bar graphs can be defined and changed by software, depending on the situation.

Mounting option included

Measuring 5.7 inches in the diagonal, the display supports a resolution of 320 x 240. Images and texts can be mixed as desired. Macro pages let the developer realize a multilingual display. The energy-efficient LED background illumination is set via software. To give the developer the greatest level of freedom, the display units provide three different interfaces – RS 232, I²C bus, and SPI bus. The display can be used in an enhanced temperature range of -20°C to +70°C.

* touch panel incl. controller
* RS-232 + I²C-Bus + SPI
* USB + RS-485 via external circuit
* character sets & graphic functions
* 128x64 .. 320x240 monochrome
* colored TFT 3.2“ ... 7“
* single supply +5V (+3.3V)
* $T_{Op.}$ -20..+70°C

There are 8 different sized, monochrome variants and 4 colored TFT displays, offering the same functions.

Ordering Information (Selection)

2.8“ 128x64 blue-white	EA eDIP128B-6LWTP
3.3“ 160x104 black&white	EA eDIP160W-7LWTP
4.2“ 240x128 blue-white	EA eDIP240B-7LWTP
5.7“ ¼-VGA blue-white	EA eDIP320B-8LWTP
USB Evaluation Kit incl.Touch Display	EA EVALeDIPxxx

Making it Clear: High-Contrast Alpha/Graphic Display

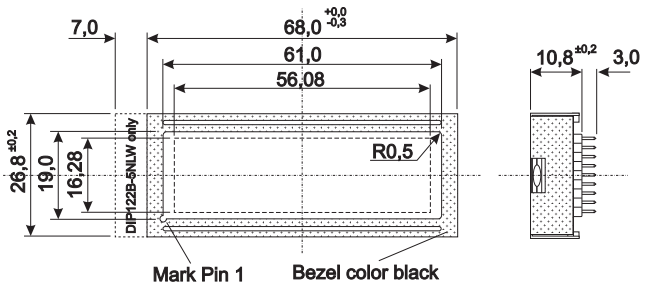
ELECTRONIC ASSEMBLY has designed the EA DIP162-DN3LW LCD module for applications where the display has to be clearly legible. The module comes with a high-contrast alphanumeric LCD supertwist display for showing two 16-character lines. LED background lighting supplied as a standard feature makes the text clearly stand out.

Different colors

The dot matrix display is available in three versions. Users can choose between black text on a yellow/green background, white text on a blue background or black on white. Automatic temperature compensation eliminates the need for contrast readjustment.

Controller onboard

The on-board ST7066 controller is 100% compatible with the widely-used HD44780 controller. The built-in character set provides 240 letters, numbers and symbols, and users can define additional 8 characters. The controller has a 4 and 8 bit data bus interface.



The EA DIP162-DN3LW is designed to make handling very easy during the manufacturing process. No mechanical assembly is necessary. The module is simply inserted into the PCB and soldered in place.

The display is powered from a single 5 V input. A 150 mA constant current source is needed for the LED lighting on the green/yellow version or a 45 mA on the blue/white and black/white versions. The wide temperature operating range (-20°C to +70°C) makes the display ideal for a variety of industrial applications.

* compact
* high reliablitity
* Fast and easy assemble
* character & graphic
* 128x64 .. 320x240 monochrome
* compatible
* short delivery time
* long term availability
* $T_{Op.}$ -20..+70°C

Other versions of the display in the same housing with the same pinout can also be supplied. Users can choose 1 x 8 or 4 x 20 character dot matrix displays or full graphic version with 122 x 32 pixels up to 240x128 pixels.

Ordering Information (Selection)

1x8 / 7.15mm	EA 8081-A3N
2x16 / 6.68mm blue-white	EA DIP162-DN3LW
4x20 / 3.73mm yellow/green	EA DIP203G-4NLED
122x32 / AX6120, blue-white	EA DIP122B-5NLW
128x64 / SBN0064, b&w	EA DIP128J-6N5LW
240x128 / SAP1024, blue-wht	EA DIP240B-7KLW

OLEDs for Industrial Applications

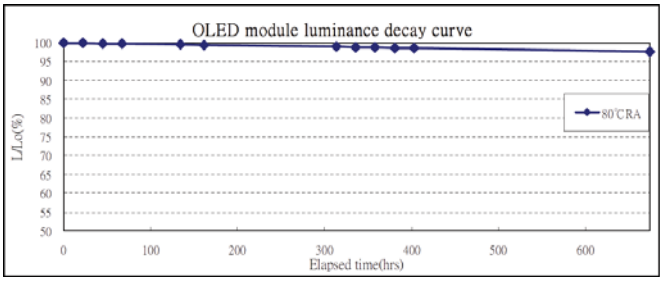
$T_{op.}$ -40..+80°C

Because of their valued brilliant optic in smartphones OLED displays have become indispensable. These displays are based on organic materials. The display manufacturer ELECTRONIC ASSEMBLY now also brings this technology in the field of industrial applications.

Contrast 2000:1

With an extreme high contrast ratio of 2000:1, the

OLED models from ELECTRONIC ASSEMBLY are real eye-catchers. The high contrast ratio is achieved by using a genuinely black background and active display technology. A new, patented system eliminates the relatively short service life of previous OLED displays. OLED displays from ELECTRONIC ASSEMBLY can be



operated 100,000 hours and more at room temperature. Even when used at maximum operating temperature (80°C), they retain 50 percent or their original brightness after 14,000 hours.

Especially the new OLED display family EA OLEDxxx can be integrated easily because of its built-in pins with pitch 2.54mm (1/10“). So there‘s no longer any need to think about mechanical mounting stuff with this construction.

Wide Temperature Range -40..+80°C

The OLED displays also provide full contrast at the complete operating temperature range, even down to -40°C! No contrast adjustment is required for this. Their response time of 10 microseconds gives the displays an extremely fast response time as well, regardless whether they are used at high or low temperatures. In addition, information shown on the OLED displays is easy to read, no matter what

OLED Displays (Graphic only)				
Ordering code	**Size**	**Resolution**	**Dimension**	**Connector**
EA OLEDS102-6	1.59“	102x64	39x39mm	Pins
EA OLEDM128-6	2.18“	128x64	55x44mm	Pins
EA OLEDL128-7	2.9“	128x64	68x49mm	Pins
EA W064048-XALG	0.66“	46x48	19x18mm	Direct
EA W096016-XALB	0.84“	96x16	29x9mm	Direct
EA W096064-XALG	0.95“	96x64	25x23mm	Direct
EA W128128-XRLG	1.18“ round	128x128	37x41mm	ZIF
EA W128128-XALG	1.5“	128x128	34x37mm	ZIF
EA W128032-XALG	2.2“	132x32	62x24mm	ZIF
EA W128064-XALG	2.42“	128x64	61x37mm	ZIF
EA W256064-XALG	3.12“	256x64	88x28mm	ZIF
EA W256064-XGLG	5.5“	256x64	146x45mm	ZIF

the viewing angle. The interface to any microcontroller is done via standard SPI or I²C bus. Power supply is needed with 3.3V plus 12V mostly. Current consumption ranges between 15 and 200 mA, depending on the size of the display. ELECTRONIC ASSEMBLY provides each support to interface desing with a µC. Various application examples and code snippets are available for free.

* Excellent Contrast
* SPI / I²C bus
* Graphic ability
* Superfast also at -40°C (t_r/t_f =10µs)
* Perfect for wearables
* Micro display from 0.66“ off
* Low power

Ordering Information (Selection)

128x64 yellow with pins	EA OLEDL128-6GGA
128x128 blue, round, ZIF	EA W128128-XRLB
96x16 white, 29x9mm	EA W096016-XALW
2x16 5.5mm text, yellow	EA W162-X3LG

EA SYLOG series

Compact Data Logger with USB and WiFi

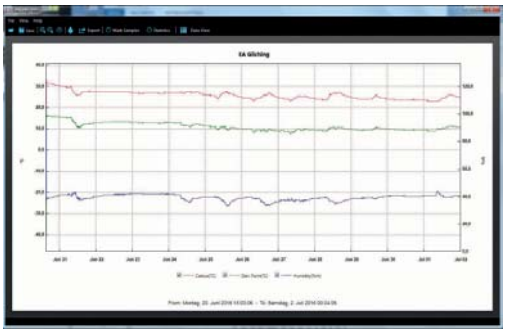
ELECTRONIC ASSEMBLY offers different data logger for monitoring and recording ambient temperature. The EA SYLOG-USB-1 is especially well suited to applications in the pharmaceutical, food, transportation and logistics industries. Data logger with the code EA WLAN-xxx are to become installed in the range of a WiFi network. So supervising becomes easy directly from the workplace. Therefore all readings are available immediately.

* USB connection
* Temperature
* Humidity
* Voltage, Current
* WiFi Interface
* with large LCD
* Battery Powered

USB Interface - EA SYLOG

The EA SYLOG-U-2LCD e.g. measures temperature and humidity. It save up to 16,382 readings. Users can set the time lapse between measurements from 10

seconds to 12 hours to customize the monitoring period, which can span as little as 5 hours or as much as 1 year. The time at which measurements are to be taken is also programmable.
The software provided graphically depicts the measurements on the computer screen and formats the graphics for printing. Data can also be converted and exported in different standard formats to be processed further.



EA WLAN series with WiFi / WLAN

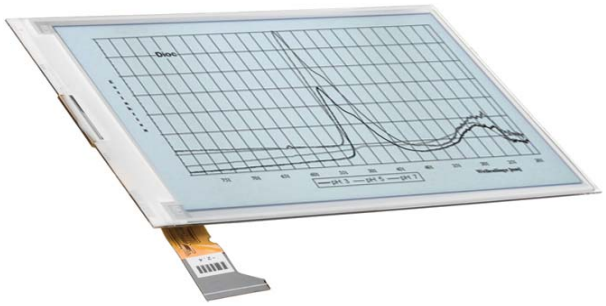
The EA WLAN-T+ measures temperature and humidity in the range of -20..+60°C. The large display shows the measurement at a distance together with any alert

and min/max. All readings of the data logger will be distributed to a pc in network via WiFi. If the WiFi isn't available, the data will be stored on a SD card on logger side until the network will become available again.
As an accessory a WiFi alert module with loud sound and LED flash is available to supervise one or more WiFi logger without the use of any pc.

Ordering Information (Selection)

Temp. -35..+80°C with LCD	EA SYLOG-U-1LCD
Voltage 0..30V	EA SYLOG-USB-3
Loop 4..20mA	EA SYLOG-USB-4
WiFi Temperature	EA WLAN-T+
WiFi Temp. and Humidity	EA WLAN-TH

e-Paper Displays
Zero Current - Amazing Contrast

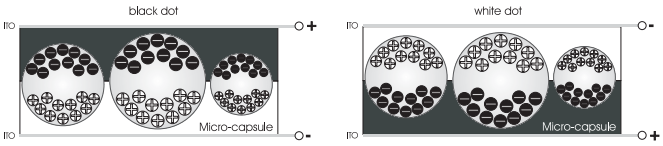


Unreached Contrast and Viewing Angle

The new e-paper displays series „EA EPA“ do provide the most neutral display for text and graphic. These displays are straight black&white displays with 2 gray levels. The resolution is with its 90dpi quiet high and provides therefore fine pictures. The displays are well readable without any backlight even under direct sunlight.

Technology

Embedded in small micro capsules and surrounded by viscous polymer there are small black and white particle. The white particle are positive loaded and the black ones negative. An electrostatic field may change the position of the micro capsules and therewith the color. After that the electrostatic field can be switched off. The position of the capsules stays stable.



Because of the viscosity of the transparent polymer, e-paper displays do store its display content for many years - without any current consumption.

Superflat and with SPI

With an overall height of only 1.18mm these displays do match all applications. The 2“ type EA EPA20-A is equipped with a standard SPI interface. Connection is done via 24-pin ZIF connector. Power supply voltage is 3.3V. The operating temperature range is 0..+50°C.
Larger displays with 4.3“ and 6“ and a resolution of 800x600 and 800x480 are also available.

The field of application starts from price tag, weather station, storage gauge, timetable, doorplate up to the well-known eBook reader.

EA eLABEL20-A as a starter kit

The EA EVALeLABEL20-A was developed for an easy start and some individual test. We developed this intelligent 2“ e-paper display, which will be shipped out ready to use with battery. The EA eLABEL20-A shows some pages automatically. Via one of the serial interface SPI, RS-232 or I²C individual text and pictures can be shown. The onboard FLASH and the integrated character sets do ease creation of individual demos.

* Excellent Contrast
* Zero Power
* Clean white Display
* Single Supply 3.3V
* Graphic Ability
* 4 Gray Scale
* as Standard available

Thanks to the integrated battery (CR2032) the EA ELABEL20-A may be plugged-off from pc after pictures and text are loaded. Demos run automatically. Switching off the battery freezes the display content. Forever.

Ordering Information

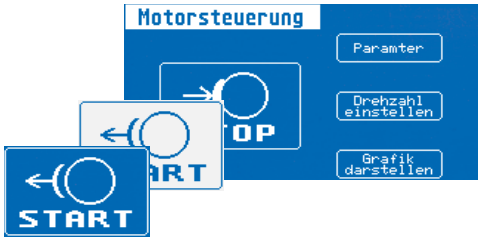
2“ e-paper display, SPI	EA EPA20-A
4.3“ e-paper display	EA EAP43-A
6“ e-paper display	EA EPA60-A
2“ e-paper with intelligence	EA ELABEL20-A
2“ e-paper as a starter kit	EA EVALELABEL20

The Easy Way for Communication with and w./o. Touchpanel

The EA KIT-series has built up it's reputation within many different applications as a smart control panel. The outstanding attributes of the well proved KIT-series are the cross-platform and simplicity to use. There's no need to learn a complicated programming language and work-in tools and driver.

Touchpanel for Mounting

All functions are easy to use. „Programming" is done via standard RS-232 interface. Even assembling is quickly done with the help of our anodized aluminium bezels.



Display Output

16 different fonts are built in for viewing machine settings or error messages. All characters can be zoomed and displayed horizontal or vertical - accurate to the pixel ! Many graphics functions are built in for easy drawing: place box, draw line, automatically scaled bargraph and so on. No need to say that these control units can store and display many bitmaps, logos and help text.

Input per Touch Panel

With a light touch on the display you are able to control a machine or any device in a smart way. The display is sensitive for pressure i.e. control can bo done with finger or pencil for example. Even with very dry hands or using a glove you are able to control your equipment. On the first glance a touch panel based system seems to be just innovative and space-saving in comparison to a standard keyboard. Looking twice there are many other advantages: above all flexibility allows to change key pad and legend at any time. Thus even for 1 pc. off control panel can be produced with different languages ! Also during run time key pads can be modified in size and position. According to the display content the same key pad may become a different function. Other key pad may be turned off. Double booking is no longer necessary. This makes operation much more simple and prevents operating error.

* opt. Mounting Bezel / Plastic Case
* RS-232 / RS-422 / USB Interface
* 5V, 12V, 24V Supply
* up to 16 digital I/O's
* Blue-White or Yellow/ Green
* Simulator Software for Windows®
* Short Leadtime

Flexibility is even more: thanks to the built-in FLASH/ EEPROM it is possible to download a complete new touch panel definition after sales, too.

Simulation Software for Windows®

The software „ELECTRONIC ASSEMBLY LCD-Tools" allows full simulation of pictures and macros on a standard pc screen. Start the free download now and be convinced of the multi-functional and easy programming of the EA KIT-series.

Ordering Information (Selection)

320x240, ¼-VGA, 5.9", Touch	EA KIT320-8LWTP
240x128, 5.0" with Touchpanel	EA KIT240-7LWTP
160x128, 5.1" with Touchpanel	EA KIT160-7LWTP
240x64, 5.4" with Touchpanel	EA KIT240-6LEDTP
160x80, 3.1" with Touchpanel	EA KIT160-6LEDTP
128x64, 2.8" with Touchpanel	EA KIT129-6LWTP
120x32, 2.4" with Touchpanel	EA KIT120-5LEDTP

EA PLUG128

OLED Display with USB and PCAP

Direct USB

From now on displays can also be operated directly on the USB - incl. touchpanel. The connection is surprisingly easy, the power supply is included automatically.

The new family EA PLUGxxx provides the matching displays for it. The latest version is 2.9“ with 128x64 pixels. Built-in are various character sets and graphic capabilities. Thanks to digital inputs and outputs, this display can also handle small control tasks as a stand-alone application.

* USB Anschluss
* keine Stromversorgung erforderlich
* ASCII mit ÄÖÜ und ß
* Grafikfunktionen
* berührempfindliche Glasfront
* extrem weiter Blickwinkel
* digitale Ein-/Ausgänge
* mit Frontblende zum Einkleben

SPI, I²C, RS-232

The display provides additional interfaces for communication with microcontroller applications. All are bi-directional and designed for 3.3V level.

OLED

The OLED display offers a contrast of about 2000:1. It is extremely fast; even at low temperatures down to -40°C, the screen appears fluid and without delay. The all around viewing angle is around 170°. With its 2.9“ screen diagonal, the EA PLUG128L-6TB is the first member of an entire display family. Other sizes will follow with e.g. 1.6“ and 2.2“.

Sensitive Surface

The front of the display is a robust glass plate, which enables any input. A gentle touch to the surface is sufficient, e.g. to change the screen or trigger an action.

Screw Terminals

In the „Z“ version, the display is equiped with 12 screw terminals for easy connection to external sensors or detectors. 2 analogue inputs enable the measurement of a voltage, which can be displayed directly on the display if desired.

No	Name	Type	Description	Remark
1	GND		Ground 0V	
2	Vin		Power Supply 3.3~5V	
3	AIN1	I	Analog input 1	0~3,3V
4	AIN2	I	Analog input 2	0~3,3V
5	I/O 1	I/O	Digital In- or Output PWM	High Power Output
6	I/O 2	I/O	Digital In- or Output	High Power Output
7	I/O 3	I/O	Digital In- or Output	High Power Output
8	I/O 4	I/O	Digital In- or Output	High Power Output
9	I/O 5	I/O	Digital In- or Output	Low Power Output
10	I/O 6	I/O	Digital In- or Output	Low Power Output
11	I/O 7	I/O	Digital In- or Output	Low Power Output
12	I/O 8	I/O	Digital In- or Output	Low Power Output

Furthermore, a 26-pin IDC socket connector is equipped, which keeps even more I/Os and additional serial interfaces ready.

Design

The EA PLUGL128-6GTB is the designer version with full black front, designed for indoor use. Alternatively, we also deliver the front in a transmissive version called

„-6GTC“. At the expense of the deep black background, this combination offers a much brighter display.

Ordering Information

2.9“ OLED Graphic with USB and touchpanel	EA PLUGL128-6GTB
With screw terminal and IDC socket	EA PLUGL128-6GTBZ
2.9“ OLED Graphic with USB, transmissive touch	EA PLUGL128-6GTC
With screw terminal and IDC socket	EA PLUGL128-6GTCZ
USB cable (about 1m)	EA KUSB-MINI

DISPLAY
ELECTRONIC ASSEMBLY
VISIONS

ELECTRONIC ASSEMBLY –
Displays designed to make things easy

Variable LCD Display Requires
No Additional Auxiliary Voltage

Multifunction TFT Display
5“ - EA uniTFT050-A

Available now in AppStore and PlayStore
Augmented Reality App

uniSKETCH for Windows
incl. Simulator

Compatible TFT Series
With Acoustic Feedback

Intelligent Display
Cuts Development Time

Making it Clear: High-Contrast
Alphanumeric Display

OLEDs for Industrial Applications
with SPI and 4/8-Bit Interface

Compact Data Logger
with USB and WiFi

e-Paper Displays
Zero Current - Amazing Contrast

The Easy Way for Communication
With and w./o. Touchpanel

OLED Displays with USB
and PCAP

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