LCD signs and boards

Information Display Systems

Charles de Gaulle Airport – Paris- France

LCD displays

General features

New LCD technology allows to displays very readable text. Solari offers a wide range of customized LCD displays, which can be equipped with:

- mosaic modules
- dot-matrix modules.

Mosaic modules are designed to display characters which resemble printed ones, in order to give text a very pleasant look. On the other end, dot-matrix modules ensure higher flexibility and allow to display non-western characters, such as Chinese and Thai.

Each board is equipped with a backlighting system that provides the appropriate contrast when lighting conditions are poor.

Boards are fully configurable according to customer requirements, allowing to choose a specific number of rows and characters per row.

LCD displays can be easily connected to a host computer by means of an Ethernet TCP/IP connection or a serial line.

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LCD MODULES

LCD modules can be classified in three main categories: reflective, transmissive and trasnflective.

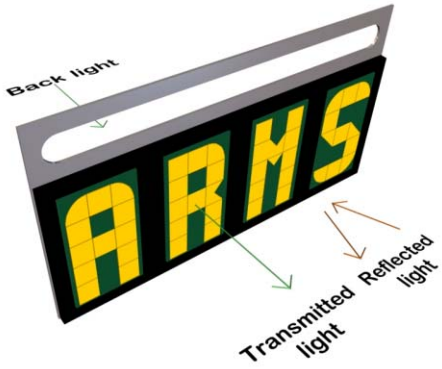
In the **reflective mode**, ambient light is used to illuminate the display, which reflects part of it (orange arrow in the picture on the right).. This mode works best in an outdoor or well-lighted office environment

Transmissive LCDs require a backlight to be visible and transmit part of the light coming from back (green arrow in the picture on the right). They work best in low light conditions with the backlight on continuously.

Transflective LCDs are a combination of transmissive and reflective LCDs. They reflect part of the ambient light and transmit part of the backlight, thus resulting readable both in well-lighted (outdoor) environments and in dark environments.

All Solari's LCD modules are transflective and are available in three types:

- Hi-Res Mosaic
- Low-Res Mosaic
- Dot matrix



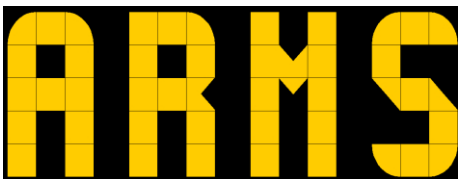
Categories of LCD modules

Hi-res mosaic module

HI-RES MOSAIC MODULES

These modules use a large (100+) number of pixels per character, each pixel having different shape and dimensions. A careful choice of the above parameters allows to display western characters which closely resemble typographical print, resulting in a very good readability of the board.

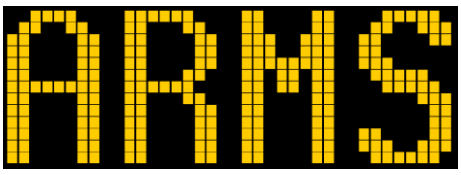
On the other hand, mosaic modules are much less flexible than dot matrix modules, as it is not possible to change character font, size, spacing and other typographical parameters.



Low-res mosaic module

LOW-RES MOSAIC MODULES

These modules are similar to Hi-Res modules but use a smaller number of pixels, resulting in a less accurate rendering of characters. Usually, Low-Res modules support upper case characters only, but can be considerably cheaper than Hi-res modules.



Dot-matrix mosaic module

DOT MATRIX MODULES

These modules consist of rectangular pixels ordered in a grid with fixed shape, dimensions and pitch. Dot matrix modules can be installed with or without a gap

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between each other; in the latter case, each row consists of a continuous graphic surface, which is useful to display non-western characters such as Thai or Arabic (Chinese words can be represented using a single 24x24 area, so in this case a continuous surface is not necessary)

COLOR

Using appropriate filters, it is possible to choose several foreground and background colors, such as white on blue or yellow on black.

BRIGHTNESS CONTROL

All boards are equipped with a brightness control that automatically adjusts LCD brightness (on pre-established levels) according to the environmental light.

SIGN CONTROLLER AND COMMUNICATIONS

Simpler signs are controlled by a microprocessor-based controller unit which is used to interface the host computer, to perform internal diagnostics and to drive LCD modules. In this case, the signs are connected to the host computer by means of a serial line, using any of the following standards:

- RS-232/422/485
- DSK

More complex signs are equipped with an embedded PC which offers more sophisticated functions and better performance. In particular, these signs are typically connected to the control system by means of a 10/100 Ethernet connection with full TCP/IP protocol support.

The availability of an embedded PC ensures the capability to provide advanced functions. In particular, selected models can be provided with:

- HTTP server, which allows to control working parameters and to perform diagnostics using a standard browser
- SNMP support with extended MIB
- Remote stand-by capability

TFT DISPLAY FOR LOGOS

Some application requires the capability to display high-resolution images in full color (for instance, Airline logos in Airport applications). In such a case, LCD signs can be equipped with LCD-TFT panels that ensure high resolution at full color and high brightness.

Rio de Janeiro Airport - Hi-res mosaic module

Rio de Janeiro Airport - Hi-res mosaic module

Mandalay Airport - Hi-res mosaic module

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POWER SUPPLY

All signs and boards are powered at 230 VAC 50 Hz (110 VAC 60 Hz on request) and include power supply units to provide low voltage (5 VDC and 12 VDC) to LCD modules and control electronics.

FONTS

On dot-matrix models, text can be displayed using several available fonts, ranging from 7 x 5 to 16 x 8, both in single and double stroke. Non-western character fonts (Arabic, Thai, etc.) and custom designed fonts can also be used.

Mosaic models are capable to display their native font only, but can produce a much crisper text.

MECHANICAL STRUCTURE

The modular mechanical construction allows to manufacture display boards of any size and configuration. The mechanical structure has been carefully designed for simple installation and easy access to the components. Each row of LCD modules can be easily tilted downwards, ensuring the possibility to replace modules safely, quickly and without any special tool.

Rio de Janeiro Airport - Hi-res mosaic module

Charles de Gaulle Airport – Paris
Low-res mosaic module