

LED Displays

Overview

A short introduction to Modular LED Display Technology and its uses in advertising, education and other areas.

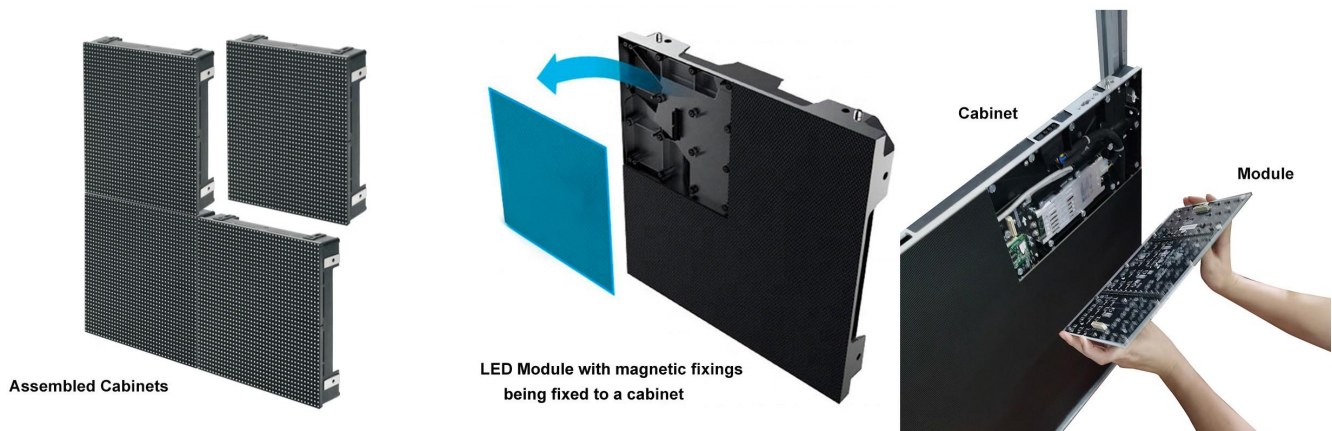
Many people worry when involved in the purchase of digital LED displays for the first time. They may not know how to choose the LED display with a suitable resolution (pixel pitch) and brightness to suit the location and environment? How much should they budget for the LED display? Choosing the right LED screen is not a trivial matter. Making the right choice is not only related to the success or failure of the advertising itself, but also to the company's own reputation and brand reputation.

We aim to reduce those concerns and provide information to help make informed decisions to create successful projects and [ongoing](#) brand success.



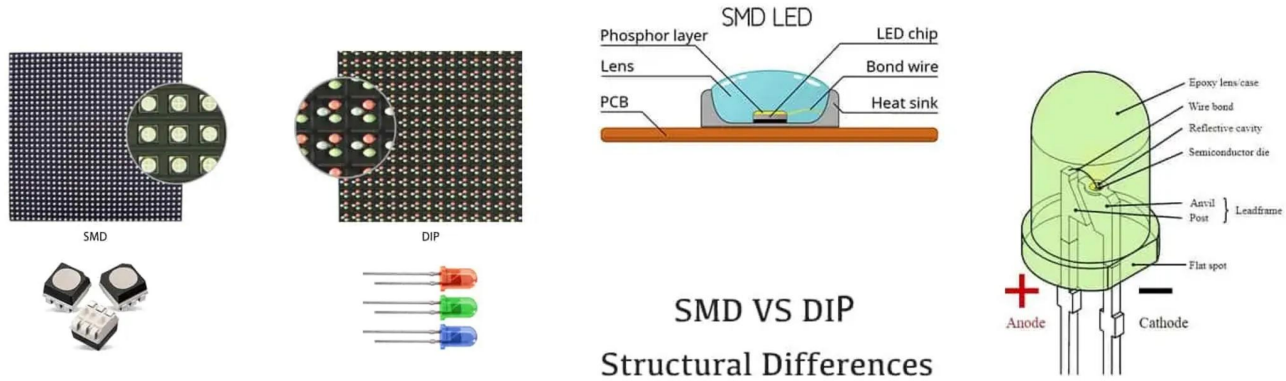
What is a Modular Digital LED Display ?

"A modular LED display is a flat panel display that uses an array of light-emitting diodes (LEDs) as pixels. The LEDs are fitted into modules that quickly and easily connect together to form a large display of virtually any size and shape. The brightness of LEDs allows them to be used outdoors where they are easily visible in sunlight for a wide variety of uses such as store signs and billboards etc".



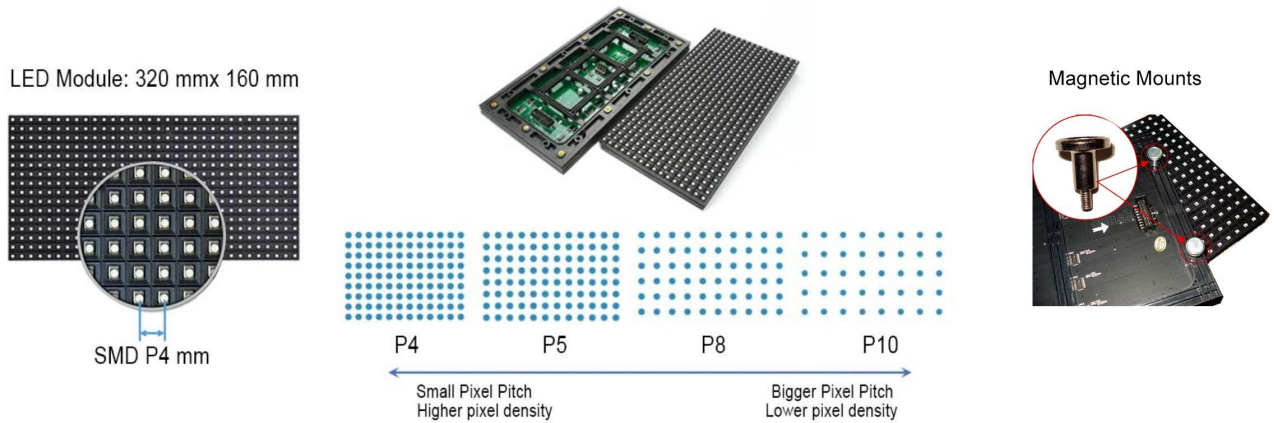
What are the differences between SDP and DIP LEDs used in displays

An LED DIP chip will typically produce around 4 lumens per LED, much less than the newer chips. SMD stands for Surface mounted diode and are much smaller and efficient LEDs than the previous DIP chips. They have become popular due to their versatility and are typically mounted and soldered onto a circuit board.



What is an LED display module?

An LED module (or panel) is typically a 320x160mm array of LEDs in a plastic moulding that integrates the LEDs and electronics so that the LEDs reproduce images and videos.



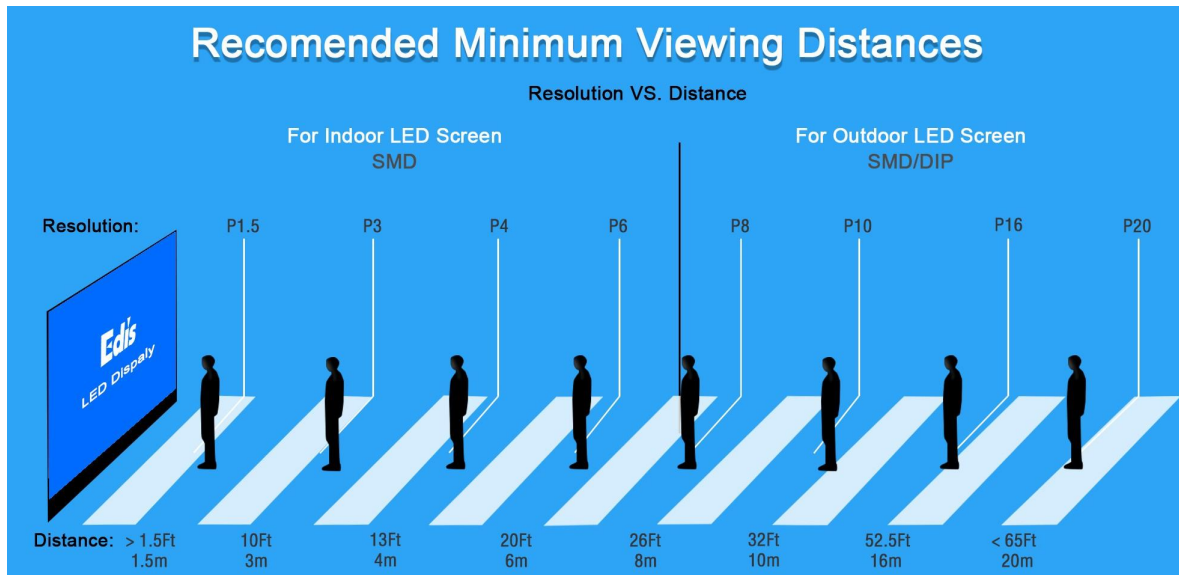
How are LED modules used to make a display ?

LED Modules can be made from small flat, curved or bendable materials to suit their intended use. They can be loaded into cabinets, fixed directly to steell supports in a frame work or screwed to a wooden backboard etc



What resolution is needed to see LED Displays clearly ?

The required resolution of a display depends on the distance the observer from the display. A simple rule of thumb is that the optimum viewing distance is the same as the pixel pitch but in metres so a P8 (8mm pixel pitch) is best viewed at 8 metres from the display.



What screen brightness is needed for different locations ?

Screen brightness needs to be chosen to stand out from the ambient brightness of the display's location. A low brightness screen for indoors and a very much brighter screen for a display in full sunlight.

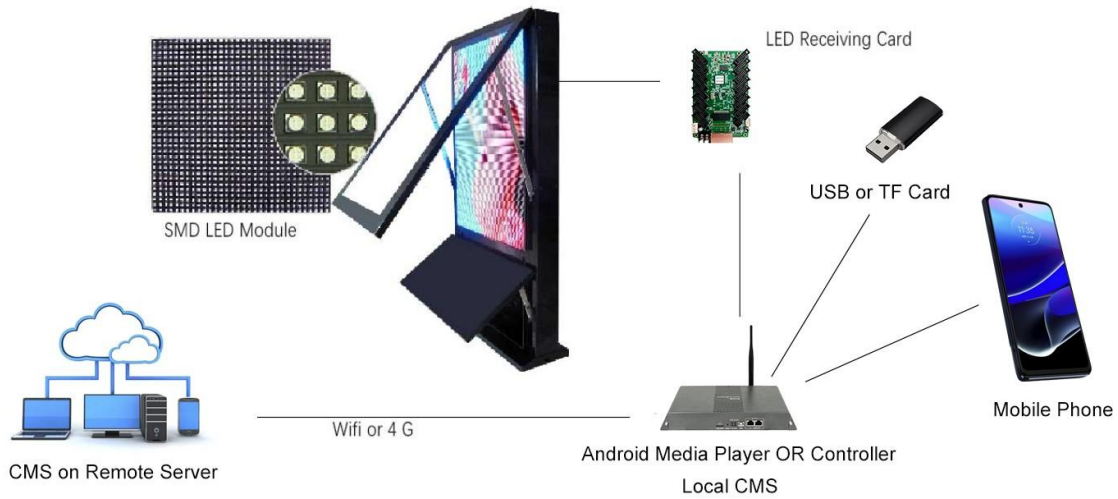


Outdoor 5,000 Nits

Indoor 500 Nits

How is media displayed on an LED screen ?

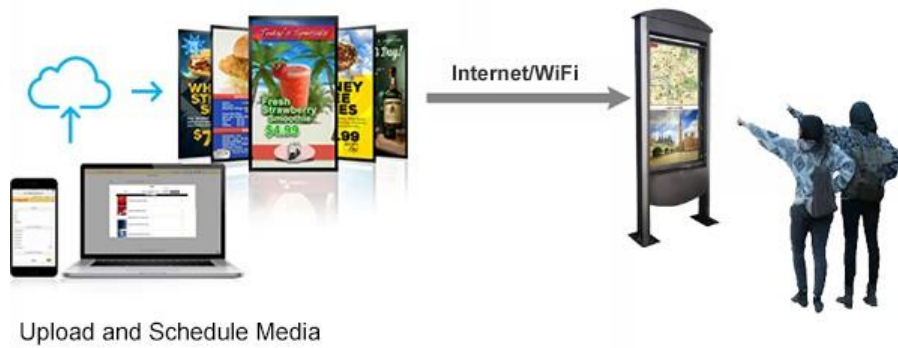
Media can be provided from a host of sources either locally by TF Card, mobile phone, WiFi, Bluetooth or remotely via ethernet cable, WiFi, 4G or 5G to a remote server. Images and sound are controlled by Content Media System (CMS) software installed locally on an Android or Windows CPU or from a server based CMS that controls many displays



How does CMS software control media on LED Displays

A content management system (CMS) is a software application that enables users to create, edit, collaborate, publish and store digital content.

How Remote CMS Works



In practice CMS software is easy to use and a single designer can create, update and change media very quickly to one or many displays at the same time.

How are LED Cabinets installed as Displays

Large Video wall displays are generally built using 40x40mm 3mm thick steel tube fixed directly or with a wood panel base to an existing wall. Cabinets with front access modules are then fixed to the framework with simple mounting clamps and the whole assembly fixed with an out surround.

The cabinets will normally have interlocking fixings and cable links joining them.

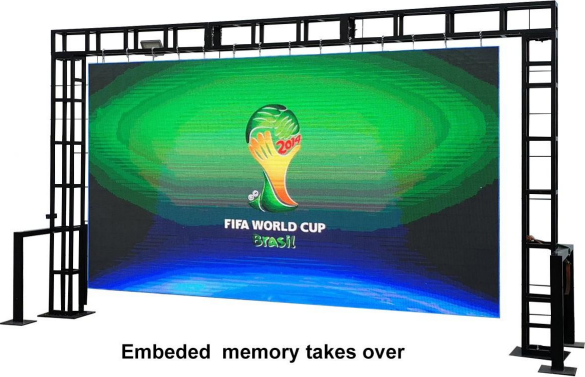
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There are many variations that can be adopted to suit site location and conditions.

What happens to Display Images if the Internet connection fails ?

Network Fail



Embedded memory takes over

The CMS system, that controls the presentation of media on the LED display, will save content to local memory built into the media player inside the LED Display so media is safe and still plays despite internet failure. Albeit no updates can be uploaded remotely until the connection is restored.