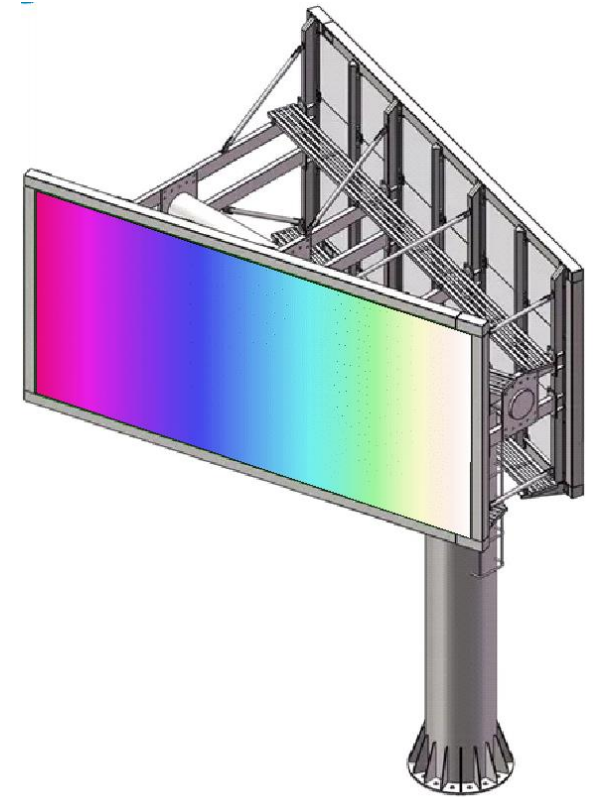


How to Choose Right LED Screens



By

DGICON

LED SCREEN & DIGITAL DISPLAY SOLUTIONS

Dubai, UAE

DGICON
LED SCREEN & DIGITAL DISPLAY SOLUTIONS

Bringing Synergy in Business & Entertainment

If you are planning to install LED Screen for your Business or Entertainment needs the below briefings from Dgicon will help you “To Choose the Best LED option for your Specific use”.



What the purpose of LED Screen

- To Display Advertising Messages*
- To Show Videos or Graphics*
- To Provide Information to Customers*
- To use for Entertainment purpose*
- OR To replace TV by a big format screen*

The main purpose of investing in LED Display Screens is to provide a high-quality visual communication tool for various industries and sectors, especially for advertising, promotional and/or Entertainments purposes.

LED Display Screens are widely used in outdoor and indoor settings to display advertisements, product information, and promotional contents. They are also commonly used in events such as concerts, sporting events, and conferences, to display information and enhance the visual experience for attendees.

LED Displays are highly customizable, and can be programmed to display various types of contents, including texts, images, and videos.

Additionally, LED Display Screens are used in public spaces such as transportation hubs, shopping malls, and airports to display important information such as schedules, directions, and emergency alerts.

And to replace TV or Home Theatre to Bigger sizes because of Size limitation of ready made TVs in market.

Where you want to install the LED screen?

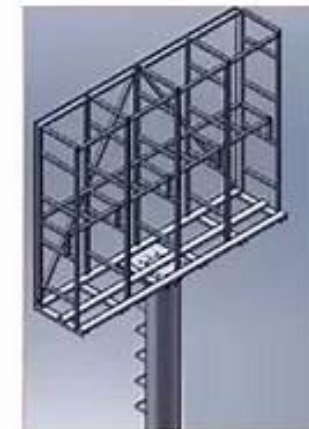
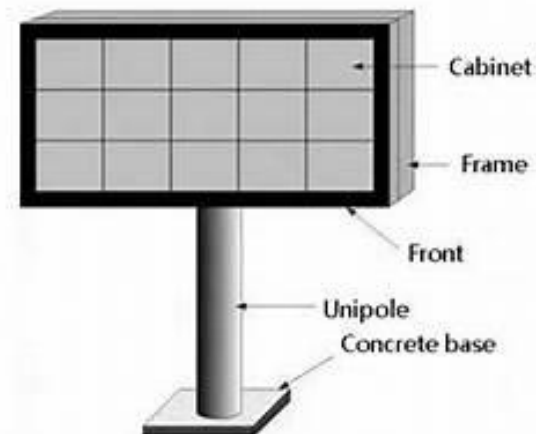
Indoors or Outdoors

On Wall, Roof, Poles, Hanging, or Banner Kiosks etc.

Location of LED Screen is also an important factor to consider.

The brightness of the Screen should be higher than the surrounding Brightness level to get the attention to the screen contents.

Outdoor Screens need to be Environmental frontally like IP65 (rain protected), Corrosion resistive, etc. to meet the harsh weather conditions and to overcome the impact of Sunlight



Factors to Consider While Choosing LED Screens

LED Screens come in different Pixel resolutions, brightness levels, colors, and features, and each choice affects the quality, efficiency, and effectiveness of the visuals displayed on them. The right LED screen should match the needs and goals of the user, fit the location and environment, and provide clear, vivid, and reliable images or videos.

This guide provides useful tips, factors, and considerations, such as the viewing distance, angle, and height, the ambient light levels, the content types and formats, the maintenance requirements, and the budget limitations.

By following this guide, users can avoid common mistakes, such as overspending on unnecessary features, underestimating the technical requirements, or compromising on quality or safety standards.

If you want to display advertising messages in a crowded area, a larger screen will be more visible. If the LED screen is for indoor use, you may want to consider a smaller size.

Factors to Consider While Choosing LED Screens

Choosing the appropriate LED display size requires careful consideration of several factors depending on your specific needs and application. Here are some tips to help you choose the right LED display size:

1. Viewing distance:

The viewing distance is the most important factor in determining the appropriate LED display pixels.

The larger the distance, the larger the screen size required.

Smaller the Viewing distance, smaller the pixel pitches (Explained in detail after) required for Clear images & Videos.

2. Space Availability:

Consider the available space where the LED display will be installed. Make sure the size of the LED display fits the available area without overcrowding or making the area look awkward.

Factors to Consider While Choosing LED Screens

3. Content:

Consider the type of content that will be displayed on the LED screen. Different content types require different display sizes. For example, if the display will be showing simple text, then a smaller size display can be used.

However, if the content consists of high-resolution images or videos, then a larger display size will be required.

4. Budget:

The cost of the display size is another important factor to consider. Larger screen sizes and Smaller Pixel Pitches are more expensive compared to smaller displays and higher Pixel Pitches.

5. Ambient Light Conditions:

The ambient light conditions can also affect the choice of the LED display. If the installation is in brighter Surrounding, then a high bright LED lamp screens are required to ensure visibility.

Deciding the Suitable Pixel Pitch of the LED Screen?

How to choose the optimal LED Screen Resolution? When there are more pixels on the LED screen display, the higher the image quality.

Of course, the higher the number of pixels, the more expensive the LED Screen. Therefore, it is necessary to find an ideal balance between good visibility and competitive price when buying LED Screens.

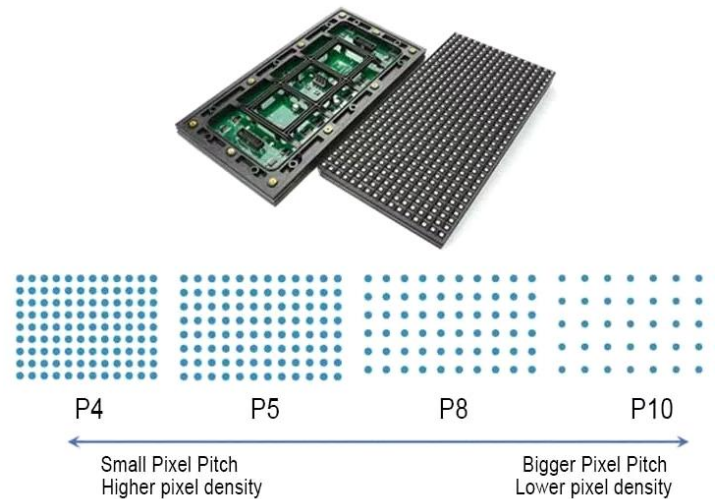
Choose the suitable pixel pitch for the LED screen display according to the minimum viewing distance.

What is Pixel Pitch of LED Display?

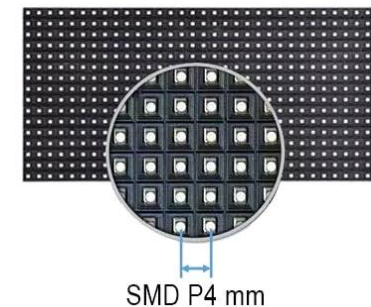
The Pixel Pitch means the center to center distance between two adjacent LED lamps in an LED Module or Screen

Indoor Pixel Pitch starts in mm from 0.9, 1.25, 1.53, 1.86, 2, 2.5, till 10mm

Outdoor Pixel Pitch starts in mm from 2.5, 3.076 4, 5, 6, 6.67, etc.



LED Module: 320 mmx 160 mm



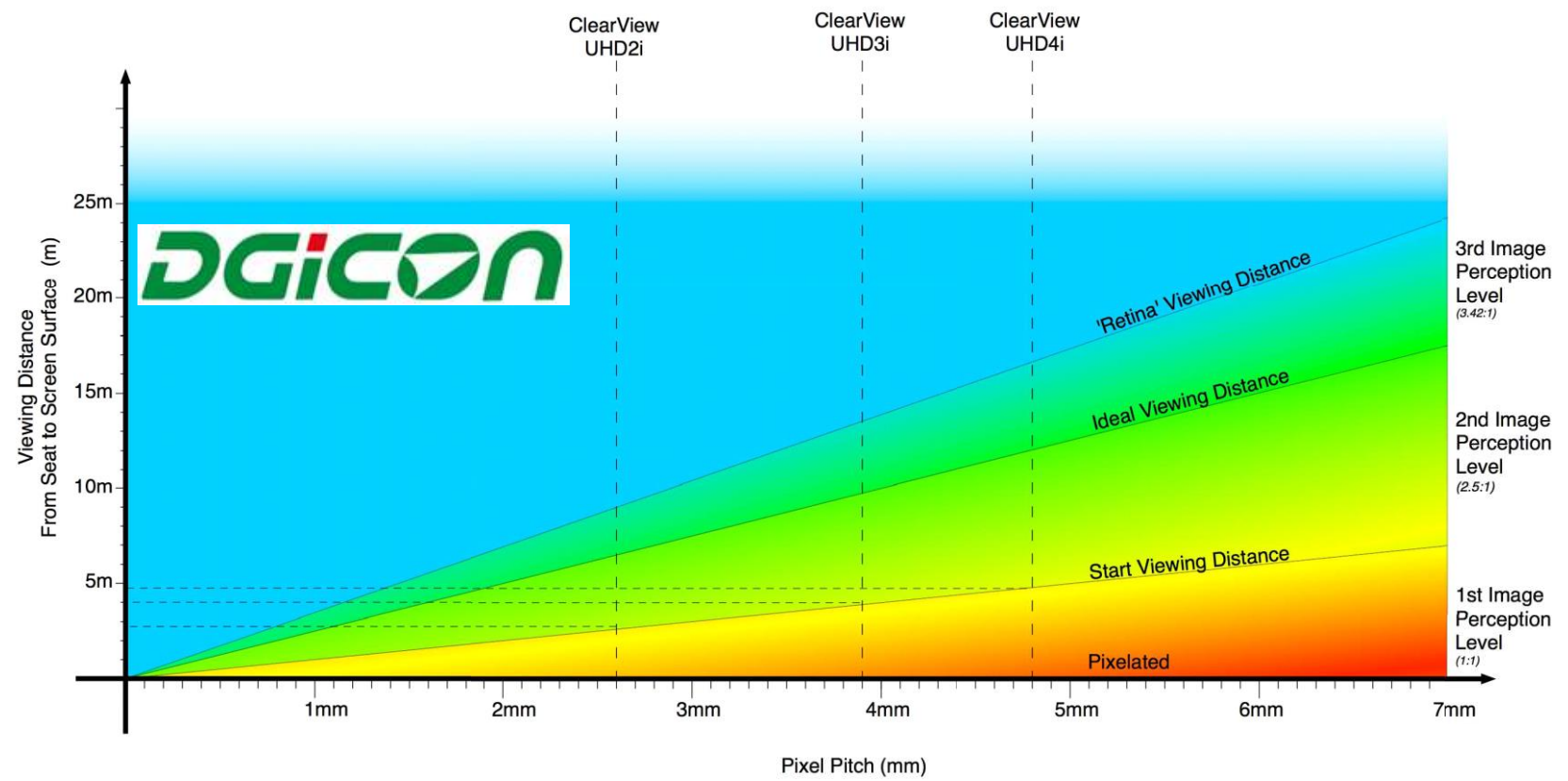
Deciding the Suitable Pixel Pitch of the LED Screen?

Choosing the suitable pixel pitch for an LED screen display depends on several factors such as viewing distance, screen size, and content resolution. Here are some guidelines to help you choose the right pixel pitch:

Recommended Viewing Distances for LED Screens with SMD2020

We recommend that the front row of your seating is no closer to the screen surface than the 'start viewing distance'.

For a typical setup with a stage depth >4m the UHD3i will be ideal for all viewers.



Deciding the Suitable Pixel Pitch of the LED Screen?

1. Viewing distance:

Determine how far away the audience will be from the LED screen. The closer the audience is, the smaller the pixel pitch should be.

2. Content Resolution:

The resolution of the content being displayed should match the native resolution of the LED screen. The pixel pitch should be chosen to achieve the desired resolution.

3. Budget:

The cost of the screen will increase as the pixel pitch decreases.

For outdoor LED displays, P4, P5 are generally used for short distances, and P6, P6.67, P8 or P10 for farther.

For indoor display screens, generally, P1.53, P1.86, P2, P2.5, or P3.076 are used, and P4 or P5 are used for the farther.

Choose a pixel pitch for LED screens that provides optimal viewing distance and image clarity while still fitting within your budget. Decide what suitable pixel pitch to choose that base on corresponds to the minimum viewing distance in meters.

For example, if the minimum viewing distance is 5 meters then choose an LED pixel pitch as P 5mm.

Rental Indoor Screens are usually P1.9, P2.6, or P2.9 and Outdoors P2.9, P3.9 etc.

It is best to consult with a professional to determine the optimal pixel pitch for your specific needs

Deciding Suitable Brightness for LED Screen Displays

Brightness is an important technical parameter to measure LED displays. But many people don't know it well, all think that the higher brightness is better.

Actually, the suitable brightness is the best one. Otherwise, if the brightness is too high, the energy consumption will increase, and if the brightness is too low, the contents of the LED screen display cannot be seen in bright Surrounding.

Factors affecting in Choosing Suitable Brightness of LED Screens:

1. Environment:

The brightness of the LED screen should match the ambient light of the environment where it is placed.

2. Distance:

The brightness of the LED screen should depend on the viewing distance. For example, if the LED screen is placed farther away, a higher brightness level is required.

3. Content:

The brightness also depends on the type of content to be displayed in the LED screen. For example, if it is a video or image with dark colors, a higher brightness level is needed.

Usually standard Indoor LED Screen brightness are 600 to 700nits (nits=Cd/Sqm) and Outdoors 4500-5000nits. Dgicon do customization 800 to 1200nits for Indoors 5500 to 10000nits depending on Pixels and Customer needs.

Different Types of LED Screens

Both Indoor and Outdoor LED Screens are available in different Types like, Hard and Soft module screens, Transparent Module Screens, Curtains/Mesh Screens, Adhesive Screens etc.

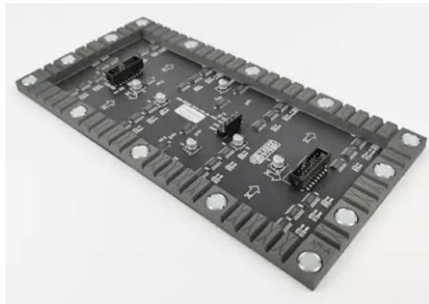
Also technologically different types like, SMD (Surface Mounted Design), DIP (Direct In-line Package), COB (Circuit On Board), GOB (Glue On Board), IMD (Integrated Matrix Devices) etc. (These technological difference are not covered here as it is not in the scope of this presentation and please contact Dgicon if required further)

Fixed LED Screens vs. Rental LED Screens

The main difference between fixed LED screens and rental LED screens is their installation method. Fixed LED screens are permanently installed in a designated location. Rental LED screens are designed to be easily transported and set up for temporary events.

Hard vs. Soft LED Screens

The Normal Screen Modules are Hard PCBs and cannot be Curved or Bendable, Soft modules are Flexible PCB Modules used for Curved or Creative Screens.



Different Types LED Screens

Normal (Non-Transparent) vs. Transparent Screens

The Normal Screens are of Opaque PCBs but the Transparent Screens are of PCB strips aligned apart depending of Vertical pixel pitch gaps. The Transparent screens are used in front or back of Glass walls or windows which help to have visibility to outside with respect to the transparency level of the screens installed.

Mesh vs. Curtain LED Screens

Mesh Screens are normal transparent screens whereas the curtain screens are foldable like curtains and can be installed without a frame support.

Front vs. Rear Maintenance LED Screens

Front Maintained means the components are installed from front, modules usually by magnets directly on metal frame or using cabinets. In case of Back maintained the components accessible from back. For Indoors usually front maintenance are employed and for Outdoor Back maintenance. The front maintenance is easily accessible and need less space at back side.

Module vs. Cabinet LED Screens

Depending on the installation Locations either modules and other components can be installed directly or using cabinets. Indoor screens if installed directly without cabinets cost and weight can be reduced, Even in case of smaller outdoor screens module direct installation without cabinets possible according to the installation location



LED Screen Components

The Active Components of LED Screens are, Modules, Power Supplies and Control System with Media Players, Sending Controllers and Receiving Cards, The passive components are Cabinets, Power supply and Data cables, Metal frame etc.

Modules means the LED PCBs with LED Lamps of required Pixel Pitches, ICs and other components on PCB.

Power supplies usually with 5VDC 200/300/350/400watts outputs and inputs 110/240VACs.

Cabinets usually Iron, Die-Aluminum or Magnesium alloy depending on Indoors or Outdoors. Modules are usually installed by using magnets in case of Indoors and using Gasket with screws in case of Outdoors

Controllers are mainly Synchronous or Asynchronous or Both



Synchronous LED Control System:

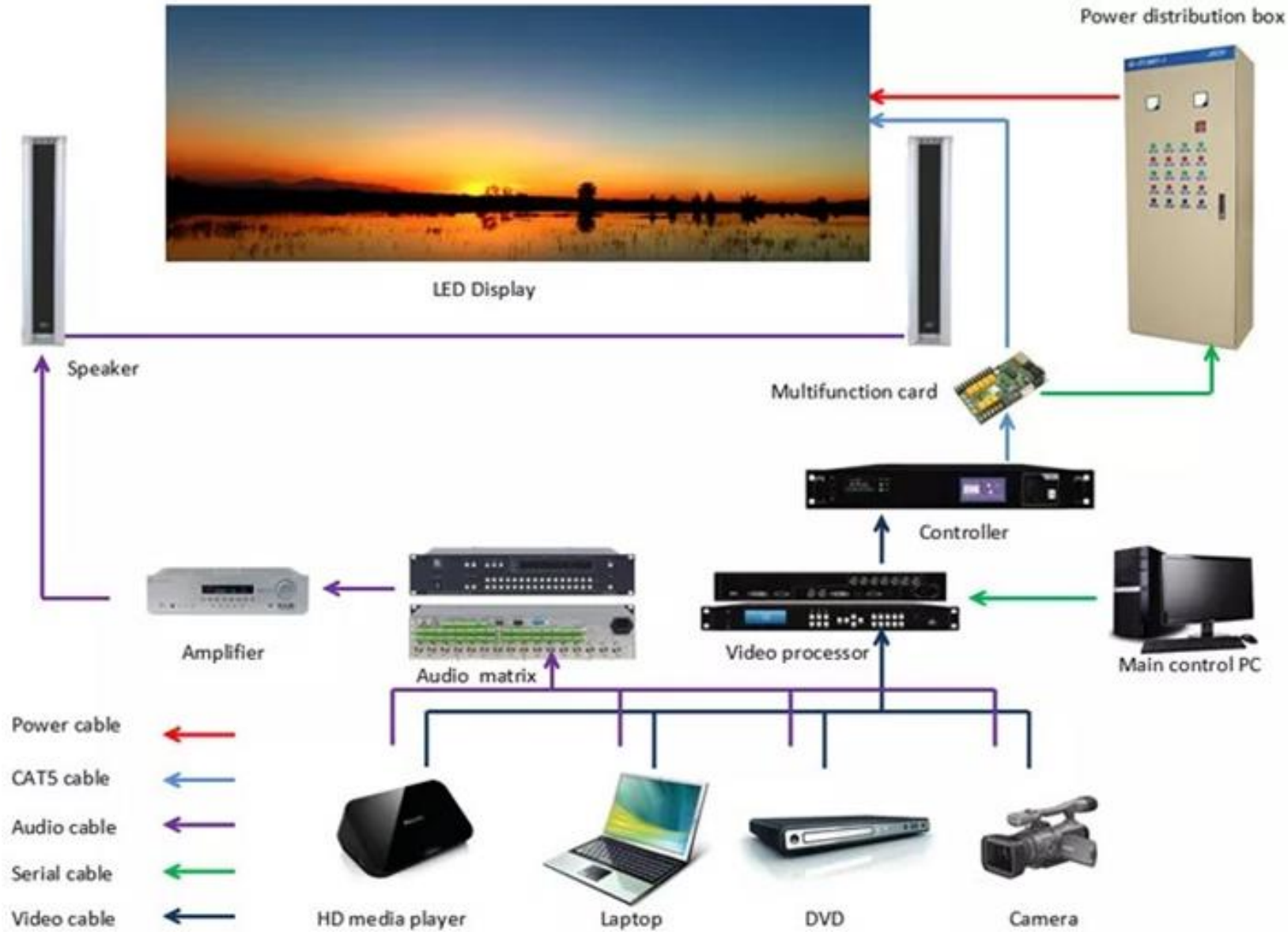
Synchronous system requires continuous communication between the display and the controller via ethernet cables or wireless networks. The content that needs to be displayed is processed by the controller and then transmitted to the display in real-time.

Synchronous LED controllers require a video source that is always connected to the LED screen. This could be a media player, a PC, a video camera, or even a computer games console, basically anything with a video source output. It relies on a continuous connection to a video source that can output through HDMI, DVI, Display Port, or CVBS. In situations where the output image does not match the aspect ratio of the LED screen, video scalers can be used to adjust the image size. Additionally, video scalers can also combine multiple sources to create a larger image or split sources into sections using picture-in-picture (PIP) functionality.

Synchronous systems allow real-time editing and updating of the displayed content. These systems are ideal for live events, advertising, and any application in which the content needs to be updated regularly. A synchronous system requires a constant connection between the display and the controlling device, such as a computer or video processor.

Synchronous systems are suitable for applications where the content needs to be changed frequently and the display is located inside a static environment, such as an indoor shopping mall, stadium, or concert hall.

Synchronous LED Control System:



Asynchronous LED Control System:

This type of control system uses a multimedia player or memory card to pre-store the content and then sends the pre-generated content to the display

Asynchronous systems, on the other hand, allow pre-programming of the content to be displayed. These systems are typically used for information displays, such as in transportation hubs, shopping centers, or public venues where the information does not need to be updated frequently.

An asynchronous system does not require a constant connection between the display and the controlling device, it also can be remote to upload the content by connection methods vary but can include WIFI, USB, and ethernet, and some of the latest models even include 4g or 5g network connections. That means the system is more flexible than synchronous systems.

The choice between synchronous and asynchronous systems depends on the specific needs of the application. For applications where speed and accuracy are critical, such as sports events or concerts, a synchronous system may be the best choice. For applications where ease of use and independence are important, such as outdoor advertising or information displays, an asynchronous system may be more suitable.

Different Pixel Options to Choose

		Pixel Pitches in mm													
Normal	Indoor	0.9	1.25	1.53	1.86	2	2.5	3.07	4	5	6	6.67	8	10	
	Outdoor	2.5	3.07	4	5	6	6.67	8	10	12 DIP	15 DIP	20 DIP	25 DIP	30 DIP	
Transparent	Indoor	3.9x7.8	5	7.8											
	Outdoor	3.9x7.8	10.4	12.5	15.6	15.6x3 1.25 DIP	31.25 DIP	25x16	25	40 Curtain	50 Curtain	80 Curtain	100 Curtain	110 Curtain	
Adhesive	Indoor	4x8	5x10	6.5	8	10	16	20							
	Outdoor														
Rental	Indoor	1.93	2.6	2.9	3.9										
	Outdoor	2.6	2.9	3.9	4.9										

Why to Choose DGICON for LED Screens

*Provide Customized LED Screen Solutions for Client Specific Needs,
Experienced and Highly Skilled Technical Team,
No Compromise on Quality,
Proper and Timely Responses to Maintenance Support &
Strive for Clients Satisfaction.*

Conclusion

Selecting the suitable LED Screen may be confusing at first, but with right knowledge and advise from Genuine & Professional Supplier like DGICON, it can be a smooth process. It is important to consider the factors like Pixel Pitch, Size, Brightness and Installation options before making the final decision.

DGICON is a reliable source to help you to opt the suitable LED Screen for your specific needs, so do not hesitate to contact us in any of the below options



Deira, Dubai-UAE



+971 55 418 1160



info@dgicon.com



www.dgicon.com